

Application for Certification Pursuant to 21-Day Emergency Permitting Process

CalPeak Power - Border, LLC

Submitted to
California Energy Commission

Submitted by

San Diego, California

Prepared by

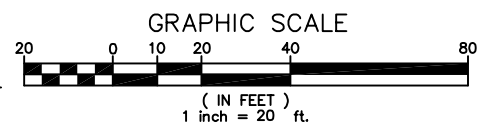
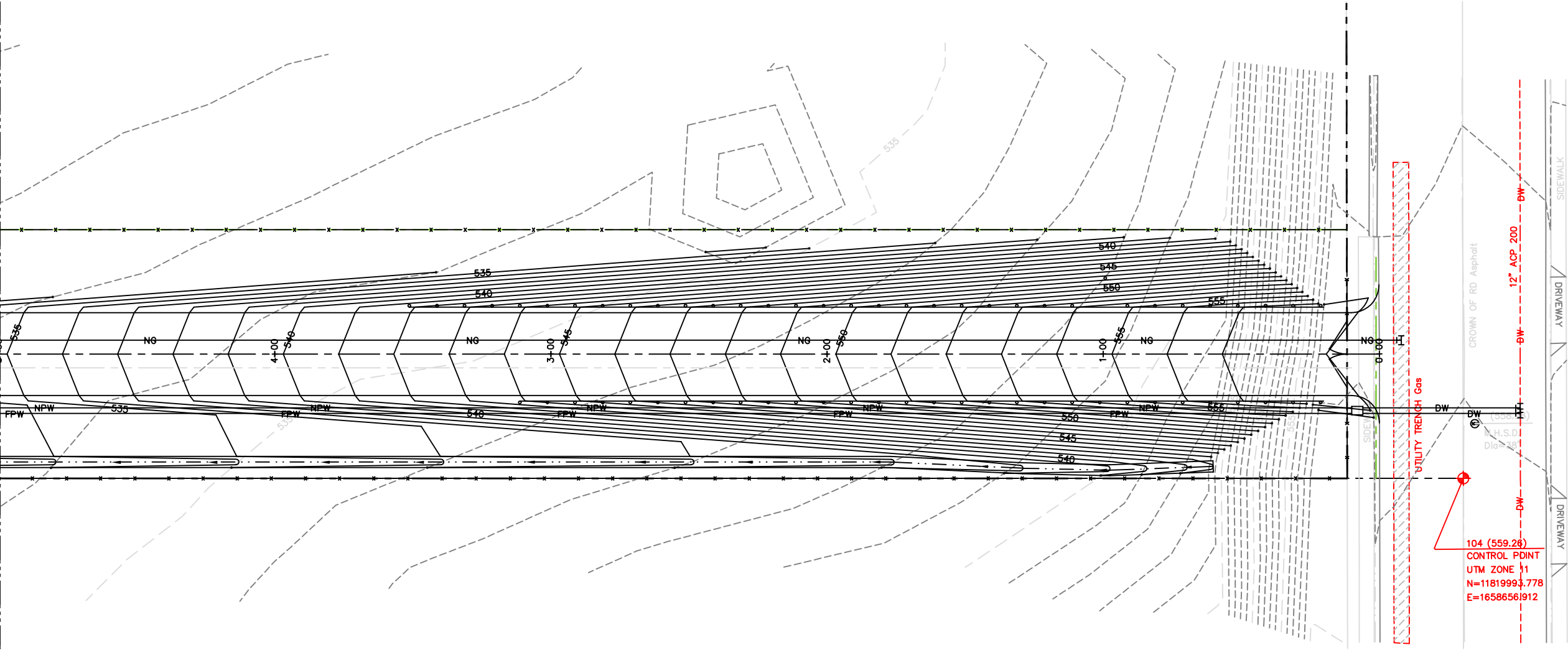
Customer-Focused Solutions
Irvine, California

June 13, 2001

APPENDICES

APPENDIX A
SITE PLANS AND ELEVATIONS

MATCHLINE — FOR CONTINUATION SEE DWG CBCU0800



IDC PROJECT NO.: 8179	CLIENT PROJECT NO.:
DRAWN: B. CURTIS	REVIEWED: J. DALY
DESIGNED: B. CURTIS	APPROVED: H. OWARA
NOTICE:	STAMP:

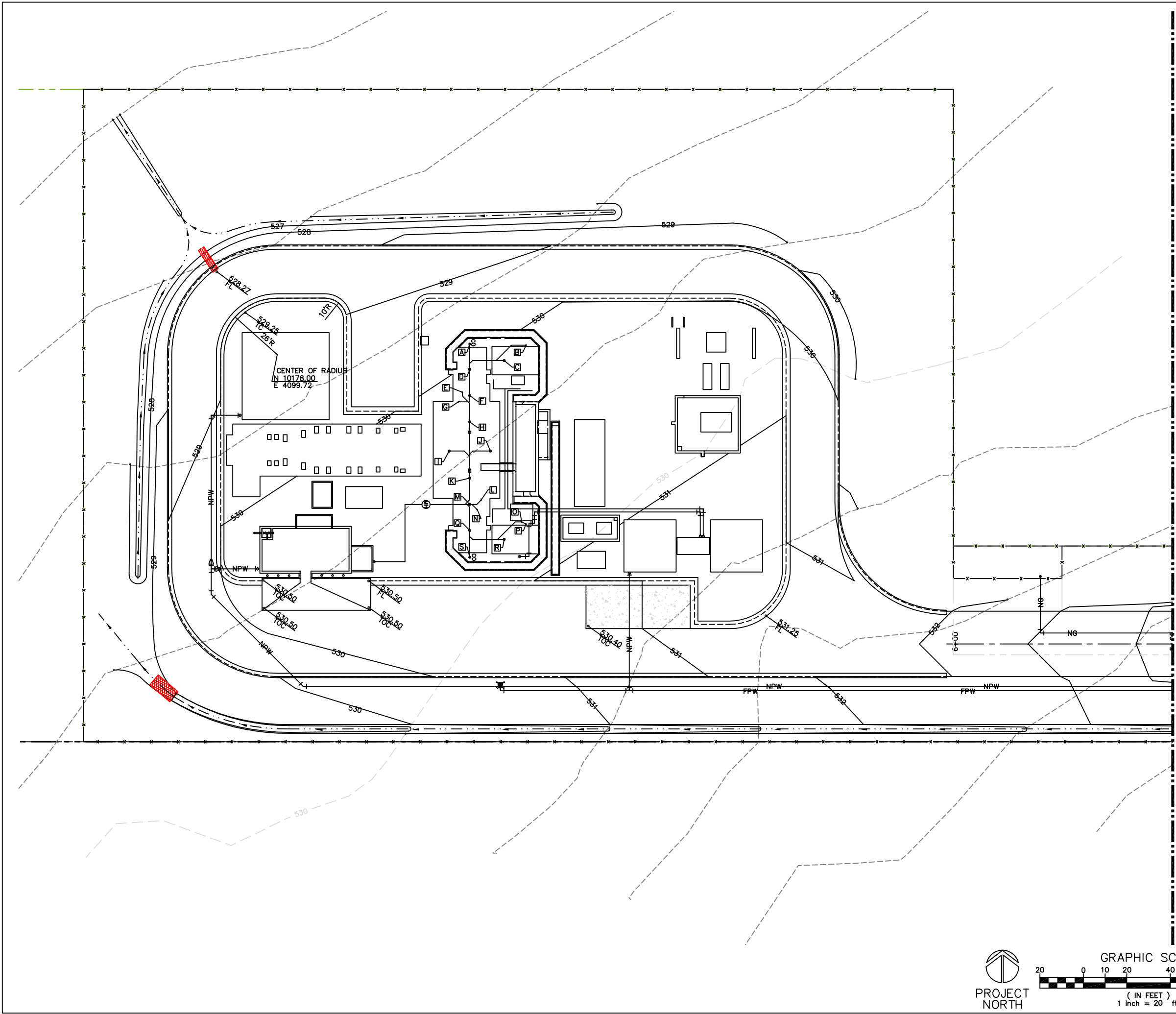
GENERAL NOTES
A.

KEYED NOTES
1

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TITLE:
BORDER — CIVIL
OVERALL SITE
SURFACES AND GRADING
PLAN
DATE ISSUED: DRAWING SCALE:
ACAD FILE: CBCS0901
DRAWING NUMBER:
CBCS0901
PRELIMINARY



IDC PROJECT NO.: 8179	CLIENT PROJECT NO.:
DRAWN: B. CURTIS	REVIEWED: J. DALY
DESIGNED: B. CURTIS	APPROVED: H. OWARA
NOTICE:	STAMP:

GENERAL NOTES

KEYED NOTES

1

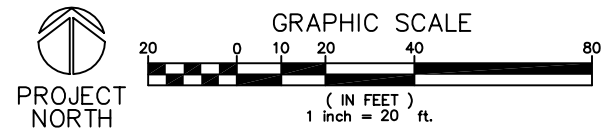
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TITLE:
BORDER – CIVIL
OVERALL SITE
SURFACES AND GRADING
PLAN

DATE ISSUED: DRAWING SCALE:
ACAD FILE: CBCS0900

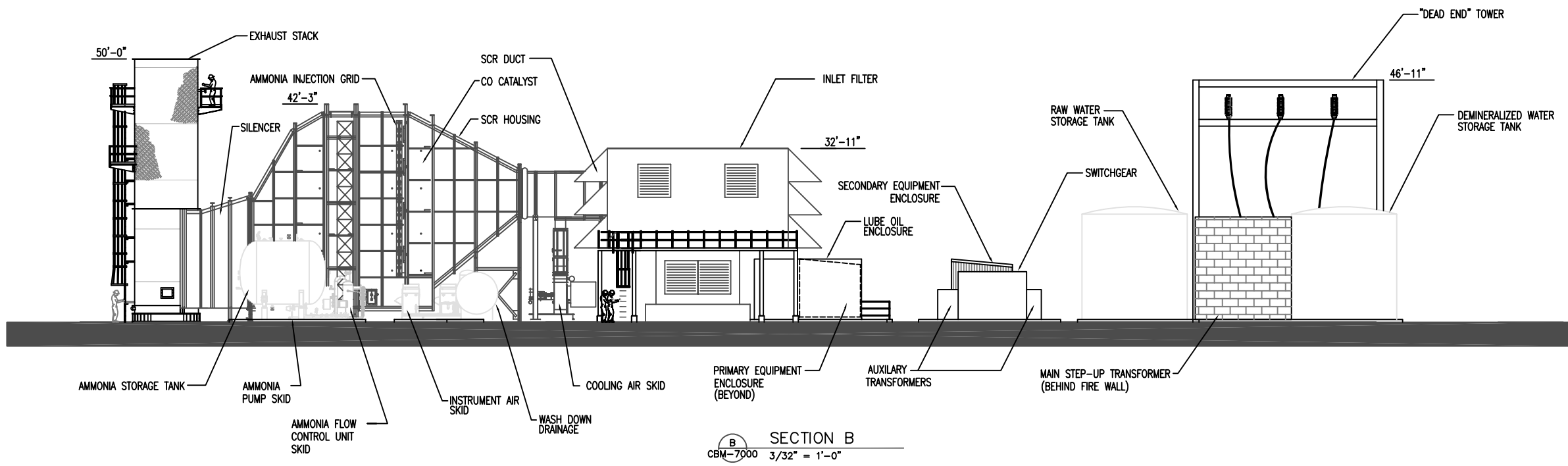
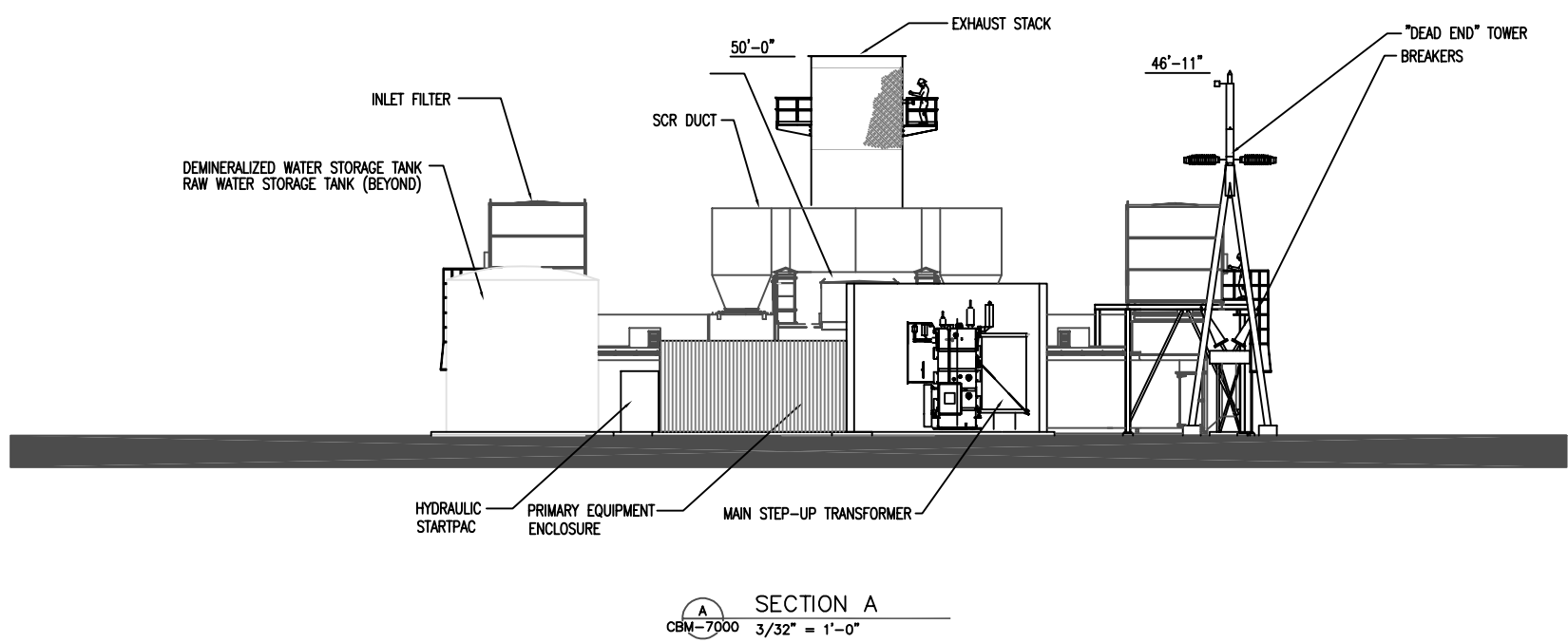
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CBCS0900
PRELIMINARY



MATCHLINE – FOR CONTINUATION SEE DWG CBCU0801

IDC PROJECT NO.: 8179
CLIENT PROJECT NO.:
DRAWING: J. MALE
REVIEWED: S. DANCEY

DESIGNED: C. WITTE
APPROVED:
NOTICE:
STAMP:



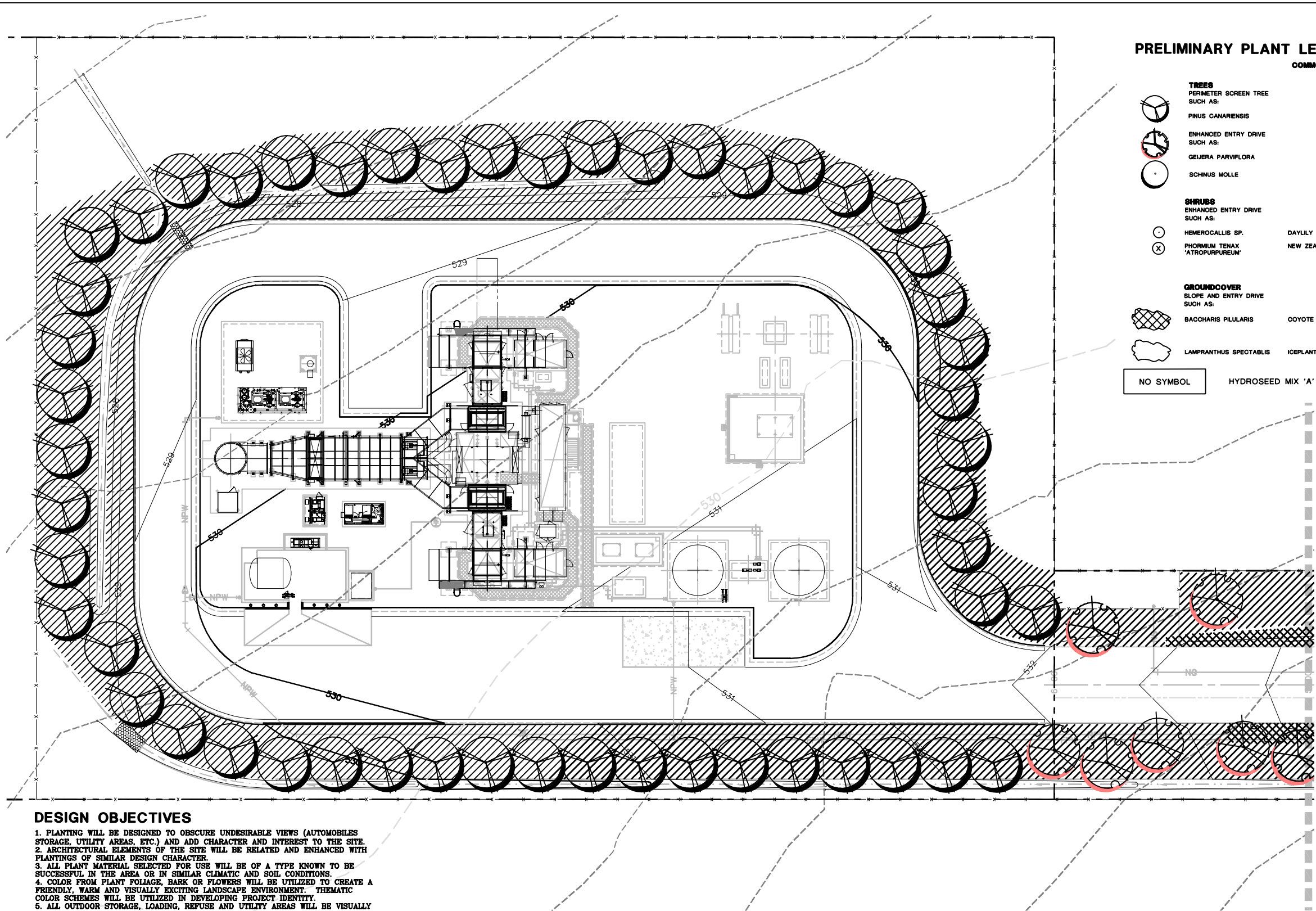
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TITLE:
**BORDER - MECHANICAL
GENERAL ARRANGEMENT
ELEVATIONS**

DATE ISSUED: DRAWING SCALE: 3/32"=1'-0"
ACAD FILE: CBM-7001
DRAWING NUMBER:
CBM-7001

06/07/2001 09:24
1223
1
CBM-7001



PRELIMINARY PLANT LEGEND

COMMON NAME	SIZE	QUANTITY/ PERCENTAGE
TREES		
PERIMETER SCREEN TREE SUCH AS:		
PINUS CANARIENSIS	24" BOX	100%
ENHANCED ENTRY DRIVE SUCH AS:		
GELIERA PARVIFLORA	24" BOX	100%
SCHINUS MOLLE	24" BOX	100%
SHRUBS		
ENHANCED ENTRY DRIVE SUCH AS:		
HEMEROCALLIS SP.	DAYLILY	
PHORMIUM TENAX 'ATROPURPUREUM'	NEW ZEALAND FLAX	
GROUND COVER		
SLOPE AND ENTRY DRIVE SUCH AS:		
BACCHARIS PILULARIS	COYOTE BUSH	1 GAL
LAMPRANTHUS SPECTABILIS	ICEPLANT	FLATS 12" O.C.
NO SYMBOL	HYDROSEED MIX 'A' - IRRIGATED NURSE CROP. ALL IRRIGATED 2:1 SLOPES	

DESIGN OBJECTIVES

1. PLANTING WILL BE DESIGNED TO OBSCURE UNDESIRABLE VIEWS (AUTOMOBILES STORAGE, UTILITY AREAS, ETC.) AND ADD CHARACTER AND INTEREST TO THE SITE.
2. ARCHITECTURAL ELEMENTS OF THE SITE WILL BE RELATED AND ENHANCED WITH PLANTINGS OF SIMILAR DESIGN CHARACTER.
3. ALL PLANT MATERIAL SELECTED FOR USE WILL BE OF A TYPE KNOWN TO BE SUCCESSFUL IN THE AREA OR IN SIMILAR CLIMATIC AND SOIL CONDITIONS.
4. COLOR FROM PLANT FOLIAGE, BARK OR FLOWERS WILL BE UTILIZED TO CREATE A FRIENDLY, WARM AND VISUALLY EXCITING LANDSCAPE ENVIRONMENT. THEMATIC COLOR SCHEMES WILL BE UTILIZED IN DEVELOPING PROJECT IDENTITY.
5. ALL OUTDOOR STORAGE, LOADING, REFUSE AND UTILITY AREAS WILL BE VISUALLY SCREENED ON ALL SIDES (EXCEPT AT ACCESS POINTS). PLANTING WILL BE USED TO SOFTEN HARD MATERIALS WHERE SUCH ARE USED FOR SCREENING.
6. VEHICULAR ENTRANCES WILL BE IDENTIFIED AND ACCENTED WITH SPECIAL GROUPINGS OR TREES, SHRUBS AND/OR GROUNDCOVERS.
7. SLOPE PLANTINGS, HYDROSEEDING AND MULCHING PROCESSES ARE INTENDED TO TAKE PLACE DURING THE APPROPRIATE SEASONS OF LATE FALL OR WINTER (NOVEMBER THROUGH FEBRUARY) FOR OPTIMUM RESULTS.
8. LANDSCAPE FINISH GRADING OBJECTIVES WILL INCLUDE POSITIVE SURFACE DRAINAGE OF PLANTED AREAS THROUGHOUT THE SITE.
9. IRRIGATION SYSTEMS WILL BE PERMANENT BELOW GROUND AUTOMATED SYSTEMS ADEQUATE FOR THE ESTABLISHMENT AND MAINTENANCE OF ALL PLANT MATERIAL. THESE SYSTEMS WILL BE INSTALLED AS SOON AS PRACTICAL AFTER GRADING AND PRIOR TO PLANT MATERIAL INSTALLATION AND HYDROSEEDING. AREAS ADJACENT TO STRUCTURES, ROADWAYS, ENTRIES AND ACTIVITY AREAS WILL BE IRRIGATED WITH PERMANENT BELOW GRADE AUTOMATED SYSTEMS.
10. ALL PERMANENTLY LANDSCAPED AREAS WILL BE SERVED BY PERMANENT, AUTOMATIC, UNDERGROUND IRRIGATION SYSTEMS USING LOW PRECIPITATION FIXED AND POP-UP STREAM ROTOR AND SHRUB SPRAY HEAD FOR TRANSITIONAL LANDSCAPE AREAS ADJACENT OPEN SPACE, PARKWAYS, PARKING AREAS LANDSCAPING AND BUILDING PERIMETER LANDSCAPE PLANTING IN ALL LAWN AREAS AND ADJACENT TO WALKS, DRIVES AND ACTIVITY AREAS.
11. ALL SOILS WILL BE FERTILIZED, AMENDED, AND TILED TO CONFORM TO RECOMMENDATIONS MADE BY A SOIL TESTING LABORATORY AND/OR LANDSCAPE ARCHITECT IN ORDER TO PROMOTE HEALTHY AND VIGOROUS PLANT GROWTH.
12. ALL PLANTING AREAS WILL BE MAINTAINED IN A WEED AND DEBRIS FREE CONDITION BY THE HOMEOWNER'S ASSOCIATION.

NOTES:

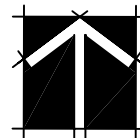
1. PRIOR TO FINAL INSPECTION AND RELEASE FOR OCCUPANCY, ALL REQUIRED LANDSCAPE IMPROVEMENTS SHALL BE INSTALLED AND ALL VEGETATION GROWING IN AN ESTABLISHED, FLOURISHING MANNER. THE REQUIRED LANDSCAPE AREAS SHALL BE FREE OF ALL FOREIGN MATTER, WEEDS AND PLANT MATERIAL NOT APPROVED AS PART OF THE LANDSCAPE PLAN. ALL IRRIGATION SHALL BE MAINTAINED IN A FULLY OPERATIONAL CONDITION.
2. THE INSTALLATION OF THE LANDSCAPING AND IRRIGATION SHALL BE INSPECTED AND DOCUMENTED TO THE CITY OF ESCONDIDO BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO OCCUPANCY. HE/SHE SHALL COMPLETE A LANDSCAPE CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE INSTALLATION IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED LANDSCAPE AND IRRIGATION PLANS.
3. DETAILED LANDSCAPE CONSTRUCTION PLANS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF GRADING OR BUILDING PERMITS.
4. FINAL SELECTION OF PLANT MATERIAL SHALL BE COORDINATED WITH SEMFRA ENERGY OFFICIALS.

NOTES:

1. ALL LANDSCAPE AND IRRIGATION SHALL CONFORM TO THE STANDARDS OF THE CITY-WIDE LANDSCAPE REGULATIONS AND THE LANDSCAPE TECHNICAL MANUAL AND ALL OTHER LANDSCAPE RELATED CITY AND REGIONAL STANDARDS.
2. IRRIGATION: AN IRRIGATION SYSTEM SHALL BE PROVIDED AS REQUIRED FOR PROPER IRRIGATION, DEVELOPMENT AND MAINTENANCE OF THE VEGETATION. THE DESIGN OF THE SYSTEM SHALL PROVIDE ADEQUATE SUPPORT FOR THE VEGETATION SELECTED.
3. MAINTENANCE: ALL REQUIRED LANDSCAPE AREAS SHALL BE MAINTAINED FREE OF DEBRIS AND LITTER AND ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION. DISEASED OR DEAD PLANT MATERIAL SHALL BE SATISFACTORILY TREATED OR REPLACED PER THE CONDITIONS OF THE PERMIT.

HYDROSEED MIX "A" IRRIGATED NURSE CROP

BOTANICAL NAME	LBS./AC.
ALYSSUM 'CARPET OF SNOW'	2
ALYSSUM 'ROYAL CARPET'	4
GAZANIA SPLENDENS 'YELLOW'	2
LUPINUS BICOLOR	6
TARGETES PATULA 'YELLOW'	2
TOTAL SEED	16



1" = 20'-0"

9404 GENESEE AVENUE SUITE 140
LA JOLLA CALIFORNIA 92037
858 . 558 . 8977
FAX 858 . 558 . 9188

SHEET TITLE:

LANDSCAPE
CONCEPT PLAN

PROJECT/CLIENT:

CALPEAK
BORDER

REVISIONS

DRAWN C.H.
APPROVED D.M.

JOB NO. 01-034
DATE 6/13/01
SCALE AS SHOWN

APPENDIX B

TRANSMISSION INTERCONNECTION STUDY AND APPLICATION



8308 CENTURY PARK COURT • SAN DIEGO, CA 92123-1593 • 619 / 696-2000

October 24, 2000

Mr. Darryl Franklin
DG Power, Inc.
1361 Shorebird Lane
Carlsbad, CA 92009

FILE NO.

Re: Acceptance of Application to Interconnect New Generating Facilities

Dear Mr. Franklin,

DG Power, Inc. ("DGP") submitted an application to SDG&E on October 17, 2000 to interconnect proposed 49 MW generating facilities at SDG&E's El Cajon, Border, Mission and Escondido Substations to SDG&E's electric transmission system. This request was received by SDG&E on October 17, 2000.

Pursuant to the terms and conditions for transmission expansion and interconnection set forth in SDG&E's Transmission Owners (TO) Tariff, SDG&E accepts your written application, and will timestamp it as complete with an effective date of October 17, 2000.

Pursuant to our TO tariff Section 10.3, SDG&E has determined that a System Impact Study is necessary to evaluate the requested interconnections. I will be forwarding a System Impact Study Agreement defining the scope, content, assumptions and terms of reference for such study, the estimated time required to complete it, and such other provisions as may reasonably be required.

Please call if you have any questions at (858) 650-6165.

Sincerely,


Stephen R. Taylor
Senior Energy Administrator

Cc: T. C. Farrelly (SDG&E)
W. P. Sakarias (SDG&E)
Dale E. Fredericks (DGP)
L. S. Tobias (ISO)

D. Korinek (SDG&E)
J. F. Walsh (SDG&E)
A. J. Perez (ISO)
S. E. Mavis (ISO)



San Diego Gas & Electric
8316 Century Park Court
San Diego, CA 92123-1582

A  Sempra Energy company
February 16, 2001

Mr. Darryl Franklin
DG Power Inc.
1361 Shorebird Lane
Carlsbad, CA 92009

Dear Mr. Franklin:

Subject: SDG&E Interconnection Study

Pursuant to our recent System Impact Study agreement, enclosed for your review and comments is a draft report summarizing SDG&E's preliminary analysis of your electric interconnection request. This report includes preliminary technical study results, a description of the required interconnection facilities and any SDG&E system upgrades, interconnection cost estimates, and discussion of any transmission congestion issues identified during our analysis.

All information provided in the System Impact Study is preliminary and subject to change. Pursuant to the California ISO Tariff and SDG&E's Transmission Owner Tariff, final technical analysis and refinement of cost estimates can be performed under a separate Facilities Study Agreement or you may chose to execute an Expedited Service Agreement covering final engineering analysis, design, cost estimates, construction and energization.

Although a summer 2001 SDG&E/ISO system model has been utilized in performing this interconnection analysis, the release of this study does not constitute a commitment by SDG&E to complete these interconnection facilities by the applicant's proposed in-service date. ...

If you have any questions regarding this report or the options available to proceed with the interconnection project, please feel free to contact me at (858) 654-1580. Following receipt of comments from the California ISO, SDG&E will finalize and reissue this study report.

Sincerely,



David Korinek, Manager
Transmission Planning


cc: D. Fredericks, DG Power
J. Miller, ISO
M. Awad, ISO
G. Gaebe

M. Iammarino
S. Peterson
D. Chan



San Diego Gas & Electric
8306 Century Park Court
San Diego, CA 92123-1593

Tel: 619 . 696 . 2000

A  Semptra Energy company

April 24, 2001

File No.

Mr. Darryl Franklin
DG POWER, INC.
1361 Shorebird Lane
Carlsbad, CA 92009

Re: Posting of TO Tariff Application Information

Dear Mr. Franklin:

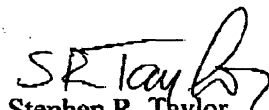
The current electric energy crisis has prompted an extraordinary number of proposals from merchants to interconnect generating projects with SDG&E's transmission system. These projects have been processed under the terms and conditions of SDG&E's Transmission Owners (TO) Tariff. This tariff defines the process and milestones for the interconnection of transmission facilities to SDG&E's transmission system.

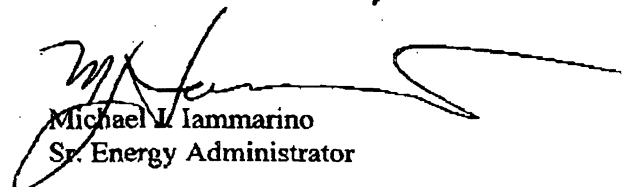
SDG&E has determined that certain information contained in a Completed Application for Interconnection pursuant to Section 10.2 of the TO Tariff is not confidential. Additionally, it would be in the public interest to share this information by posting it on SDG&E's website at www.sdge.com. The information would be useful to the public, regulatory and governmental agencies, and electricity market participants to help them understand how the market is responding to the current energy crisis. Specifically, SDG&E intends to post the interconnection queue which will include the following information:

- Date a Completed Application for Interconnection was received (establishes priority to studies and interconnections, including the cost of Interconnection Facilities)
- Identity of the Applicant
- Interconnection point(s) contemplated by the Applicant
- Resultant (or new) maximum amount of Interconnection Capacity requested at each point
- Proposed date for initiating an Interconnection
- Project status (e.g. active or inactive)

SDG&E will begin posting this information on approximately May 1, 2001. If you have any comments, please contact Mr. Stephen R. Taylor at 858-650-6165 (email staylor@sdge.com) or Mr. Michael J. Iammarino at 858-650-6166 (email miammarino@sdge.com).

Sincerely,


Stephen R. Taylor
Sr. Energy Administrator


Michael J. Iammarino
Sr. Energy Administrator



A  Sempira Energy company

**SYSTEM IMPACT STUDY OF THE
PROPOSED
49 MW POWER PLANT PROJECTS
AT
BORDER, EL CAJON
ESCONDIDO AND MISSION**

**DRAFT REPORT
VERSION 1.0**

February 16, 2001

Study Performed for CalPeak Power LLC.
by San Diego Gas & Electric Company

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EXECUTIVE SUMMARY

CalPeak Power LLC (formerly DG Power) has requested that SDG&E conduct a "System Impact Study" for the electrical interconnection of four 49MW power plant projects at Border, El Cajon, Escondido and Mission substations. The proposed generation plants are part of the year 2001 RFB capacity contracts offered by CA-ISO. The purpose of the study is to determine the electric transmission requirements to interconnect the proposed four 49 MW power plant projects to SDG&E's existing 69 kV transmission/substation facilities. Three other 2001 RFB generating projects were added in the study case at Otay, Border and Escondido Substations. A total of 343 MW generation addition (seven 49 MW RFB units) was simulated in this study to assess the system impact and interconnection requirements for those proposed RFB generation projects. The proposed operation date for all the power plants is in June 2001. Power flow, stability and short circuit analyses have been performed to examine the system impact of the proposed generation projects by using SDG&E's most currently approved transmission expansion plan.

This report identified the interconnection requirements for CalPeak's proposed generation projects. Preliminary cost estimates for interconnection of the proposed generation projects quoted in this report are conceptual estimates. Final design and construction costs may vary from these estimates. Due to the extremely short project schedule, there is not enough time to construct grid improvements to mitigate various congestion constraints caused by these 2001 summer RFB generator additions. Therefore, remedial action schemes have been assumed for the purpose of these cost estimates as an interim approach. The cost of any system upgrades required to permanently mitigate congestion issues for the proposed generation projects is beyond the scope of this study. The project scopes and designs for the system upgrades will be examined in the next phase study, called the Facility Study, or under the terms of an Expedited Service Agreement.

For Border Sub, CalPeak propose a 49MW gas turbine interconnected to SDG&E's Border 69 kV substation bus via a radial 69kV (¾ mile) generator lead. Due to the short lead time for the project, SDG&E proposes to install this generator line on an existing SDG&E 69kV pole line (i.e., double circuit construction). However, if at some time in the future this line position is needed by SDG&E for it's own system expansion needs, CalPeak will be required to vacate this pole line position and install alternative interconnection facilities at CalPeak's sole expense (e.g., a new line to Border or a loop in of the SDG&E 69kV line to a new switchyard at the CalPeak plant site). Similar relocation requirements will apply to CalPeak if SDG&E requires the 69kV switchyard position at Border Sub at some time in the future for its own transmission or distribution system expansion. The ownership demarcation point between CalPeak and SDG&E for the proposed radial line is at the drop pole to generator. The preliminary cost estimates for interconnection of the proposed generation project is \$1,008,000.

The preliminary study indicates that the combined generation at Border and two other RFB generators in the area (Border and Otay) would cause N-1 thermal overload problems on TL642, TL644, TL614 and TL658 during high South Bay generation condition. These congestion management constraints that would limit the combined dispatch capability of South Bay generation, downtown gas turbines and the proposed 2001 generators. This dispatch constraint is unacceptable because the proposed generators are under contract to supply summer peaking capacity to the ISO and the congestion constraint would not allow an increase in the generation dispatch for this area over existing levels. A temporary solution has been identified to mitigate this constraint by installing an automated generator cross-tripping scheme for these transmission contingencies. With the cross-tripping scheme the proposed generators would be allowed to dispatch on a normal basis when needed for ISO peaking generation capacity.

Preliminary short circuit analysis also identified two 69 kV circuit breakers at South Bay generation plant (breaker 3N and 3S) that would be overstressed above their rated interrupting capability with the addition of one or more of generators in the vicinity of South Bay, Otay, San Ysidro or Border Substations. These breakers are associated with the South Bay GT, which is owned by the San Diego Unified Port District. Either replacement of these breakers or installation of current limiting fusing on the Border generator will be required to mitigate this breaker overstress. These costs are also CalPeak's responsibility, but have not been included in SDG&E's estimate.

For the El Cajon Site, the proposed plant is located adjacent to SDG&E's El Cajon Substation. The generator will be interconnected to the El Cajon 69 kV bus via 250 pole-feet of new 69kV line. The preliminary cost estimates for interconnection of the proposed generation is \$465,000. The demarcation of ownership will be at generator substation fence. The preliminary study results for the proposed Mission plant and 69kV interconnection show no thermal overload problems. The short circuit study shows that two 69kV circuit would be overstressed by either generator at Mission or at El Cajon in 2001. Also, when combined with prior generation interconnection applications in the queue and other SDG&E planned transmission projects, the proposed generator at Mission would lead to overstressing three more 69kV circuit breakers at Mission by 2004. In order to mitigate this breaker exposure, CalPeak will need to either replacing the overstressed breakers or installing current limiting fusing on the generating unit. These costs are not included in SDG&E's cost estimate.

For the Mission Site, the proposed plant is adjacent to SDG&E's Mission Substation. The generator will be interconnected to the Mission 69 kV bus via a new 1000 feet underground 69kV cable. The preliminary cost estimates for interconnection of the proposed generation projects is \$1,136,000. The demarcation of ownership will be at generator substation fence. The preliminary study results for the proposed Mission plant and 69kV interconnection show no thermal overload problems. The short circuit study

shows that two 69kV circuit would be overstressed by either generator at Mission or at El Cajon in 2001. Also, when combined with prior generation interconnection applications in the queue and other SDG&E planned transmission projects, the proposed generator at Mission would lead to overstressing three more 69kV circuit breakers at Mission by 2004. In order to mitigate this breaker exposure, CalPeak will need to either replacing the overstressed breakers or installing current limiting fusing on the generating unit. These costs are not included in SDG&E's cost estimate.

For the Escondido Site, the proposed plant is located near SDG&E's Escondido Substation. The generator will be interconnected to the Escondido 69 kV bus via 1,250 feet of 69kV line. The preliminary cost estimates for interconnection of the proposed generation projects is \$730,000. The ownership demarcation will be at generator substation fence-line. The preliminary study results for the proposed Escondido plant and 69kV interconnection show that the system's performance meets all current reliability criteria with the post-project scenario. Assuming budget SDG&E breaker replacements and substation construction are completed at Escondido prior to the new generator interconnection, no breaker overstressed problems were found. However, SDG&E's currently budgeted rebuilding of the Escondido 69kV switchyard planned for June 2001 in-service must be essentially completed in order for the proposed generator to interconnect.

At each point of interconnection requested with SDG&E's substation facilities, if at some time in the future SDG&E requires the use of the proposed substation position for its own transmission and distribution system expansion, the merchant unit interconnection facilities will need to be relocated at the merchant's expense.

Certain merchants generator applications that were in SDG&E's TO Tariff queue prior to this request, but with a later in-service date, have not been modeled in this study. It is possible that when those other projects are modeled in combination with this request, it may reveal additional short circuit breaker overstress conditions. If so, CalPeak will be responsible for mitigating the additional short circuit constraints.

INTRODUCTION

CalPeak applied to San Diego & Electric Company for an electric transmission interconnection of four generation facilities located near SDG&E's substations, Border, El Cajon, Mission and Escondido under the terms of SDG&E's Transmission Owner Tariff (TO Tariff). The proposed generation plants are part of the year 2001 RFB capacity contracts offered by CA-ISO. The purpose of the study is to determine the electric transmission expansion or upgrade requirements to accommodate CalPeak's request to interconnect to SDG&E's existing 69 kV transmission/substation facilities. The proposed generator operation date for all four plants is in June 2001.

The following additions are contemplated:

Border Plant: The Proposed plant is located $\frac{3}{4}$ of a mile from SDG&E's Border Substation. A new $\frac{3}{4}$ mile of 69kV circuit will be constructed by rebuilding existing 69kV pole line from the plant site to Border Substation. Poles will be replaced as necessary to add a second 69kV circuit for the Border plant. 69kV switchyard work is required at Border to terminate the CalPeak's line. Customer will be responsible to install metering equipment that complies with ISO specifications.

El Cajon Plant: The Proposed plant is located adjacent to SDG&E's El Cajon Substation on SDG&E property. A 250 feet of 69kV circuit will be built from the plant to El Cajon 69 kV bus. 69kV switchyard work is required at El Cajon to terminate the CalPeak line. Customer will be responsible to install metering equipment that complies with ISO specifications.

Mission Plant: The Proposed plant is located adjacent to Mission Substation on SDG&E property. A 1,000 foot 69kV underground cable will be built from the plant to Mission 69 kV bus and 69kV switchyard work is required at Mission to terminate the CalPeak line. . Customer will be responsible to install metering equipment that complies with ISO specifications.

Escondido Plant: The Proposed plant is located about 1,250 feet south of Escondido Substation. A 1,250 feet 69kV line will be built from the plant to Escondido 69 kV bus. 69kV switchyard work is required at Escondido to terminate the CalPeak line. Customer will be responsible to install metering equipment that complies with ISO specifications.

DISCUSSION OF STUDY RESULTS

Power flow, stability and short circuit analyses have examined the system impact of the proposed generation projects by adding them to the electrical model of SDG&E's system which reflects our currently approved transmission expansion plan. This plan was developed through SDG&E's 2000 grid assessment study and corresponding ISO stakeholder process. The expansion plan has received the ISO's full concurrence. Three other 2001 RFB generating projects were added in these base cases at Otay, Border and Escondido Substations. A total of 343 MW generation addition (seven 49 MW RFB units) was simulated in this study to assess the system impact and interconnection requirements for those proposed RFB generation projects. Sensitivity studies were performed to examine the system impact caused by individual generation unit.

Border Plant

CalPeak has requested SDG&E to conduct an interconnection study for a 49 MW generation plant at Border substation with an in-service date of June 2001. A total of seven RFB generation units were modeled in this study. Three units (two at Border and one unit at Otay) were located in South Bay area. Any generation addition in South Bay area could create dispatch constraints on all generators in the area, including South Bay power plant and downtown gas turbines.

The preliminary study indicates that the proposed two 49 MW at Border Substation and one 49 MW at Otay would cause N-1 thermal overload problems on TL642 (South Bay-Sweetwater), TL644 (South Bay-Sweetwater), TL614 (Sweetwater-National City-Chollas-Sampson) and TL658 (Sampson-Division) during high South Bay generation condition. Appendix E shows the power flow maps and results.

Sensitivity Study for RFB Generators Dispatch in South Bay area

The addition generation in South Bay area would cause N-1 overload problems during high South Bay generation condition. This study reviewed the system impact with various dispatch scenarios from the proposed generation units in South Bay area. Table 1 shows power flow results for one of the critical outages with various dispatch scenarios for the proposed South Bay generators. Appendix F shows the power flow maps and results.

Contingency: N-1 South Bay-Sweetwater					
South Bay Power Plant at Maximum (690MW)					
Number of 49MW units		Loading on Montgomery Tap-Sweetwater		Loading on South Bay-Montgomery Tap	
Border	Otay	Normal Rating: 100MVA	15min. Emerg. Rating 125MVA	Normal rating: 100MVA	15min. Emerg. Rating 125MVA
0	0	96%	76%	87%	70%
0	1	121%	96%	103%	82%
1	1	133%	106%	110%	88%
2	1	144%	115%	118%	94%

Table 1 Sensitivity Study for RFB Generators Dispatch in South Bay area

South Bay Power Plant Dispatch Sensitivity Study

The addition of these generators will result in congestion management constraints that would limit the combined dispatch capability of South Bay generation and the proposed RFB generators. This sensitivity study examined the generation curtailment on South Bay 69 kV generation (SYGT & SY unit #1) and the 138 kV generation (SY unit #2, #3 & #4) due to thermal overload caused by the addition generators in South Bay area. These RFB generators could create dispatch constraints on the generation at South Bay 69 kV for about 1 to 1 ratio. That means one MW addition generation from RFB units would reduce dispatch capability at South Bay 69kV by one MW. The study results also show that 414 MW generation reduction at South Bay 138 kV (SY unit #2, #3 & #4) will be needed to alleviate the N-1 overload problems caused by the RFB generation addition. Appendix G shows the power flow maps and results.

Downtown Gas Turbine Dispatch Sensitivity Study

The addition of the RFB generators in South Bay area would cause thermal overload problem on TL658 (Sampson-Division). The overload would result in congestion management constraints that would limit the combined dispatch capability of the existing gas turbines in downtown area and generation in South Bay area (including all existing South Bay units and proposed 2001 RFB units). Table 2 summarizes the impact of combined generation in South Bay area and downtown area. Appendix F shows the power flow maps and results.

N-1 Sweetwater-National City-Chollas-Sampson

Generation					Loading on Sampson-Division 69 kV
Border	Otay	DIGT	NSGT	Total South Bay gen	Rating: 100MVA (no emg rating)
0 MW	49 MW	13 MW	20 MW	690 MW	99%
49 MW	49 MW	13 MW	20 MW	690 MW	110%
98 MW	49 MW	13 MW	20 MW	690 MW	120%

Table 2 Downtown Gas Turbine Dispatch Sensitivity Study

Sensitivity Study for Local Substation Load Demand

Based on the SDG&E's year 2001 load forecast, the adverse peak load demand at Border and Otay Lake substations are 28MW and 4MW, respectively. The load demand at these two substations is supporting by two 69kV lines, TL6910 (Border-Miguel, rating at 137MVA) and TL649 (Border-Otay Lake-San Ysidro-Otay). TL649 composes of various sizes of conductors rated between 137 MVA and 50MVA. A 5.5 miles (68 MVA) line segment of TL649 (TL649F, Border Tap-Otay Lake Tap 70 MVA line) appears to be a weak link to transfer power from Border. TL649F would create congestion constraints on Border generators during outage of TL6910 (Border-Miguel). The congestion could occur during off peak hours when total load at Border and Otay Lake is less than 30 MW. An automatic generator cross-tripping scheme at Border is needed to prevent transmission line overload and maintain system reliability during off peak hours. Without the cross-tripping scheme the proposed generators would not increase the ISO's net peaking generating capacity. The need for cross-tripping could be eliminated through transmission reinforcement.

Short Circuit Analysis for Border Site

The study shows that two 69 kV circuit breakers at South Bay generation plant (breaker 3N and 3S) will be overstressed above their rated interrupting capability with the addition of one or more of generators at Otay Substation and /or Border Substation. These breakers are associated with the South Bay GT, which is owned by the Port District. Appendix H shows the input data assumptions and the results of short circuit simulation.

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Subject to Revision

			% of Short Circuit Duty with 2001 RFB Generators			
	Continuous Rating (Amps)	Interrupting Rating (Amps)	OY= 0 unit BD= 0 unit	OY= 1 unit BD= 0 unit	OY= 1 unit BD= 1 unit	OY= 1 unit BD= 2 units
South Bay 69kV bus			28395 A	30160 A	30907 A	31435 A
BK 50	2000	42000	52%	56%	58%	59%
SYGT BK (3N & 3S)	2000	29000	95%	102%	104%	106%
TL641 (SY-MG)	2000	42000	61%	65%	67%	68%
TL642 (SY-MG-SW)	2000	38000	63%	67%	69%	71%
TL644 (SY-SW)	2000	42000	52%	56%	58%	59%
TL645 (SY-OY #1)	2000	42000	66%	69%	70%	71%
TL646 (SY-OY #2)	2000	42000	66%	68%	69%	70%
TL647 (SY-IB)	2000	42000	67%	71%	72%	73%

Table 3 Short circuit study at South Bay 69 kV bus

The short circuit study shows that two 69kV circuit would be overstressed by either generator at Mission or at El Cajon in 2001. Also, when combined with prior generation interconnection applications in the queue and other SDG&E planned transmission projects, the proposed generator at Mission would lead to overstressing three more 69kV circuit breakers at Mission by 2004. In order to mitigate this breaker exposure, CalPeak will need to either replacing the overstressed breakers or installing current limiting fusing on the generating unit. These costs are not included in SDG&E's cost estimate. Table 4 shows the short circuit study results.

Short Circuit Study for Mission Generation unit				
Case with El Cajon RFB unit on line				
	Continuous Rating (Amps)	Interrupting Rating (Amps)	% of Short Circuit Duty with 2001 RFB Generators	
			MS= 0 unit	MS= 1 unit
Mission 69kV bus			43970 A	45846 A
BK30	2000	42000	105%	109%
BK31	2000	40000	110%	115%
BK32	2000	40000	110%	115%
BK33	2000	38000	116%	121%
BK50	2000	41000	89%	94%
BK51	2000	41000	98%	102%
BK52	2000	41000	90%	95%
BK70	2000	40000	91%	96%
TL618	2000	42000	99%	104%
TL619	2000	38000	110%	115%
TL653	2000	42000	105%	109%
TL654	2000	38000	116%	121%
TL663	2000	42000	95%	100%
TL670	2000	42000	100%	105%
TL671	2000	40000	99%	104%
TL676	2000	40000	100%	105%

Table 4 Short circuit study for RFB units at Mission and El Cajon

Transient Stability Study

The purpose of this study is to ensure the proposed generators do not cause any stability problems during system disturbances. Based on the generator data provided by CalPeak, the study shows that no stability problems were found. Appendix I shows the stability plots.

Study Conclusion for Border Site

Preliminary study indicated that the proposed 2001 RFB units in South Bay area (Border site) could have a negative impact on system reliability. Transmission system upgrades will be required to maintain system reliability and safety operation of the proposed generator. Since the 2001 RFB generators are on a fast track schedule, system upgrades will not be done by June 2001 for interconnection. It is recommended to set temporary protection schemes to ensure safety system operation during contingency.

Temporary Protection Scheme for Border Site

The system upgrades would require at least 1 to 2 years construction lead-time. It becomes impossible to provide adequate transmission support for the RFB generators interconnected at Border Substation by June 2001. For a temporary solution, it is recommended to install an automated generator cross-tripping scheme at Border. The scheme will trip the RFB units at Border off line when the transmission contingencies were occurred. This cross-tripping scheme is needed to prevent potential cascading outages caused by overload and damage to the equipment. Without a cross-tripping scheme the proposed generators would not increase the ISO's net peaking generation capacity. As shown in table 1, dropping generation units would help to relief the transmission overload problems.

Long Term Solution for Border Site

The generator cross-tripping scheme is just a temporary operating solution for the overload problem caused by the new addition generation in South Bay. Due to the relatively high probability of transmission outages (a total of five critical outages) and complicated operating scheme, the cross-tripping scheme is not recommended as a long term solution. The transmission upgrades will provide a permanent fix for the system problem and maintain system reliability. However, the project scopes and designs for the system upgrades is outside the scope of this study. The Facility Study or analysis done under an Expedited Service Agreement will identify the project scopes and designs for the system upgrades to provide adequate transmission support for the proposed generators interconnected at Border Substation.

El Cajon Plant

The Proposed plant is located adjacent to El Cajon Substation. A short 69kV circuit will be built from the plant to El Cajon 69 kV bus. The preliminary study results for the proposed El Cajon plant and 69kV interconnection show that the system's performance meets all current reliability criteria with the post-project scenario. The short circuit study shows that two 69kV circuit would be overstressed by either generator at Mission or at El Cajon in 2001. Based on the generator data provided by CalPeak, the study shows that no stability problems were found. Appendix I shows the stability plots and Appendix J shows the Power flow maps.

Mission Plant

The Proposed plant is located adjacent to Mission Substation. A short 69kV circuit will be built from the plant to El Cajon 69 kV bus. The preliminary study results for the proposed Mission plant and 69kV interconnection show that the system's performance meets all current reliability criteria with the post-project scenario. Based on the generator data provided by CalPeak, the study shows that no stability problems were found. The short circuit study shows that two 69kV circuit would be overstressed by either generator at Mission or at El Cajon in 2001. Also, when combined with prior generation interconnection applications in the queue and other SDG&E planned transmission projects, the proposed generator at Mission would lead to overstressing three more 69kV circuit breakers at Mission by 2004. In order to mitigate this breaker exposure, CalPeak will need to either replacing the overstressed breakers or installing current limiting fusing on the generating unit. Appendix I shows the stability plots and Appendix K shows the Power flow maps.

Escondido Plant

The Proposed plant is located near Escondido Substation. A 1,250 feet 69kV line will be built from the plant to Escondido 69 kV bus. The preliminary study results for the proposed Escondido plant and 69kV interconnection show that the system's performance meets all current reliability criteria with the post-project scenario. There is no breaker overstressed problems were found. Based on the generator data provided by CalPeak, the study shows that no stability problems were found. SDG&E's currently budgeted rebuilding of the Escondido 69kV switchyard planned for June 2001 in-service must be essentially completed in order for the proposed generator to interconnect. Appendix I shows the stability plots and Appendix L shows the Power flow maps.

Project Scope for Interconnection

The project scope and cost estimates for interconnection of the CalPeak generating projects are based on preliminary engineering design. SDG&E system upgrades required for these generator interconnections will not cover in this study:

Border Plant:

Transmission Construction:

Construct approximately ¾ mile new radial 69 kV line

Rebuild approximately ¾ of a mile of existing 69 line, including pole replacements, as needed to accommodate the new 69kV circuit to the plant.

Cost \$646,000

Substation Construction

Install a new 69 kV circuit breaker and associated equipment.

Adjust protection system settings.

Install communication equipment.

Update EMS system

Install cross-tripping scheme (Costs split between affected merchants)

Cost \$362,000

Total cost: \$1,008,000

It assumed that customer will install the ISO compliant metering equipment and work with San Diego Unified Port District on South Bay GT breaker overstress concern (3N & 3S). CalPeak will own the radial 69kV line. The demarcation point of the radial line between SDG&E and CalPeak is at the drop pole to generator.

El Cajon Plant:

Transmission Construction:

Construct approximately 250 feet of new 69 kV wood pole line

Cost \$144,000

Substation Construction

Install a new 69 kV circuit breaker and associated equipment.

Adjust protection system settings.

Install communication equipment.

Update EMS system

Cost \$321,000

Total cost: \$465,000

It assumed that customer will install the ISO compliant metering equipment. The radial line between the generator and drop pole is the responsibility of the generator. The demarcation point of the radial line between SDG&E and CalPeak is at the generator fence-line.

Mission Plant:

Transmission Construction:

Construct approximately 1,000 feet of new 69 kV underground cable

Cost \$816,000

Substation Construction

Install a new 69 kV circuit breaker and associated equipment.

Adjust protection system settings.

Install communication equipment.

Update EMS system

Cost \$320,000

Total cost: \$1,136,000

It assumed that customer will install the ISO compliant metering equipment. The radial line between the generator and drop pole is the responsibility of the generator. The demarcation point of the radial line between SDG&E and CalPeak is at the generator fence-line.

Escondido Plant:

Transmission Construction:

Construct approximately 1250 feet of new 69 kV line

Rebuild approximately 1000 feet of existing 69 line, including pole replacements, as needed to accommodate the new 69kV circuit to the plant

Cost \$409,000

Substation Construction

Install a new 69 kV circuit breaker and associated equipment.

Adjust protection system settings.

Install communication equipment.

Update EMS system

Cost \$321,000

Total cost: \$730,000

It assumed that customer will install the ISO compliant metering equipment. The radial line between the generator and drop pole is the responsibility of the generator. The demarcation point of the radial line between SDG&E and CalPeak is at the generator fence-line.

Environmental and Permits

Based on the tentative plant site information received from CalPeak, SDG&E's preliminary review indicates that FAA permits might be required for new 69kV line construction around Border Substation.

APPENDIX A

Study Scope

SDG&E will determine through the study of the ISO Grid and SDG&E's electrical system the interconnection plan of service that will be required to accommodate all or a part of CalPeak's requested interconnection to SDG&E's 69 kV transmission/ substation facilities. This study will include conceptual cost estimates that are likely to be incurred for all related transmission/substation expansions and upgrades required directly or indirectly for the interconnection to the ISO Controlled Grid. The study has been performed to ensure the reliability of transmission network after the interconnection of the Generation based on relevant portions of ISO Tariff, Protocols and Grid Planning Criteria, Local reliability Criteria, WSCC's Reliability Criteria (including voltage stability criteria), SDG&E's TO Tariff, the Transmission Control Agreement, and NERC's planning standards for reasonably anticipated operating scenarios.

This study includes the following analyses:

- Conduct power flow and short circuit analyses to establish impacts of the project and to determine facilities required meeting the established reliability criteria.
- Examine physical usability of existing transmission circuits, cost estimates for facilities to upgrades required to SDG&E's system by the project and cost estimates facilities to interconnect the project to SDG&E's system
- Review system protection scheme to accommodate the project interconnection to SDG&E's system
- Review and identify new right-of-way and permits issues for project interconnection
- Identify construction schedules for project interconnection and any system upgrades

APPENDIX B

Study Assumptions

Based on the information from CalPeak, SDG&E will model Four 49 MW plants interconnected to the existing Border, El Cajon, Mission and Escondido. Three other 2001 RFB generating projects were added in the study case at Otay, Border and Escondido Substations. A total of 343 MW generation addition (seven 49 MW RFB units) was simulated in this study to assess the system impact and interconnection requirements for those proposed RFB generation projects. Appendix I shows the CalPeak's proposed generator modeling data used for this study.

For power flow analysis, the system representation is modeled based on the SDG&E's latest forecast for a 2001 Heavy Summer (peak load) scenario with the pre-existing system configuration. For short circuit study, 2001 base case was used to simulate short circuit calculation and examine the impact of the proposed generation

APPENDIX C

Study Tools and Criteria

The General Electric Power System Planning Program (GE-PSLF V11.2), Positive Sequence (Load Flow) has been used in conjunction with in-house Engineer Programming Control Language (EPCL) routines to help analyze the study results. The ASPEN Oneliner Program V5 has been used use for short circuit simulation.

Studies have been performed to determine the facilities required for the system to continue to meet all current reliability criteria for the Post-Project Scenario. Such reliability criteria include the North American Electric Reliability Council (NERC) Planning Standards, the Western Systems Coordinating Council (WSCC) Reliability Criteria, the California Independent System Operator (Cal-ISO) Grid Planning Standards, and SDG&E's standard practices.

APPENDIX D

Study Methodology

The methodology by which the Rating Study will be performed is outlined as follows:

1. Development of Base Cases / Benchmarking

The objective of the base case development is to develop a base case that would tend to stress the local area for the 2001 system configuration. A heavy summer peak load scenario with “adverse weather” load (called a 90/10 or “one-in-ten-year” forecast) is used for this purpose. Benchmarking is used to establish that the system requirements are met in absence of the proposed generation projects, so that facilities required in the post-project cases to meet the reliability criteria are used to establish the incremental facilities required by the projects.

2. Post-Project Studies

The post-Project studies examine all-lines-in-service conditions as well as a full set of contingencies, reflecting the requirements of all applicable reliability criteria. Plant VAR requirements and special system protection or remedial action schemes (if required) are expected to be identified by the studies.

APPENDIX E

Power Flow Maps for Border Plant

Pre-project Condition

Post project condition

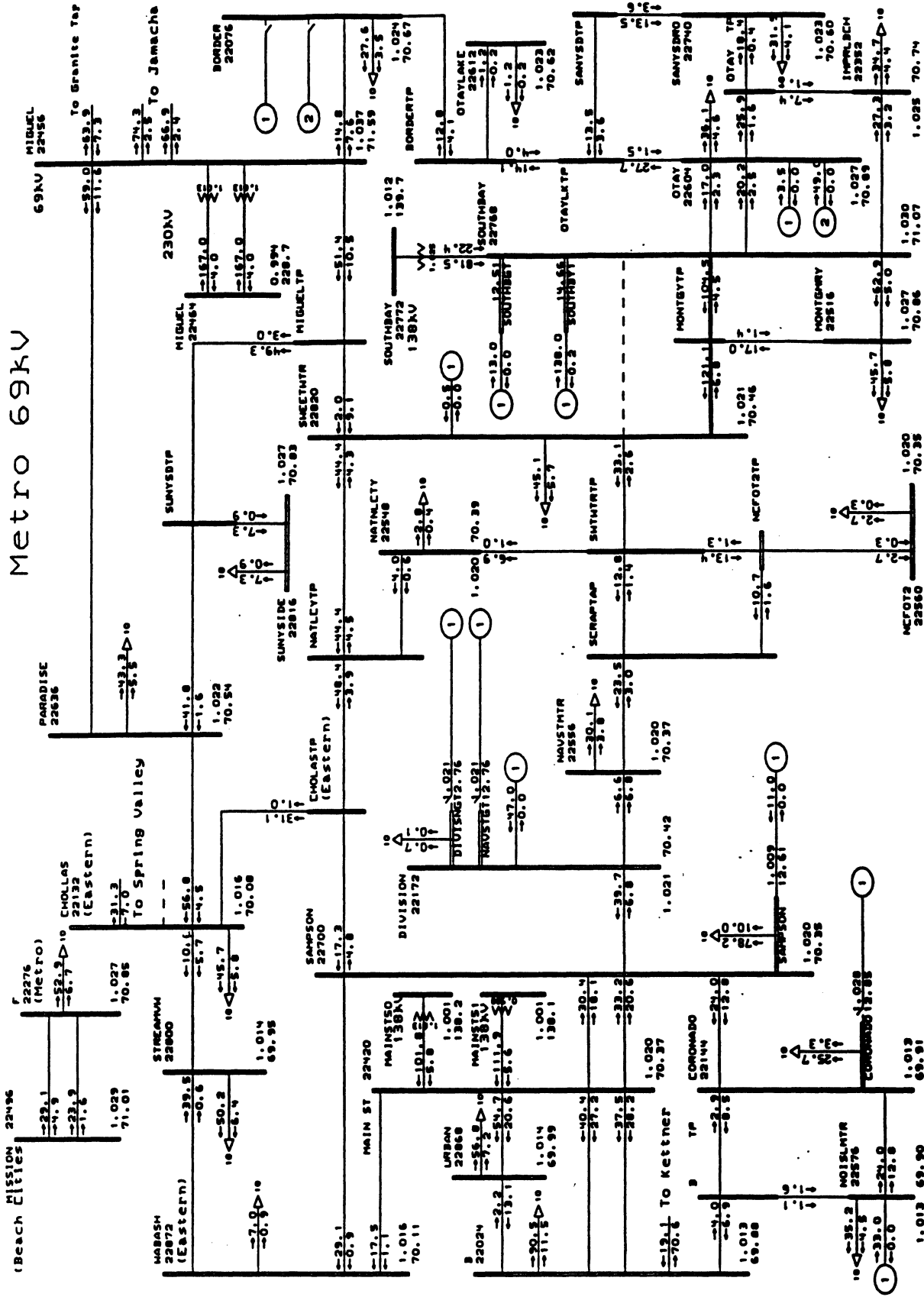
Appendix E-1

Power Flow for Pre-project Condition

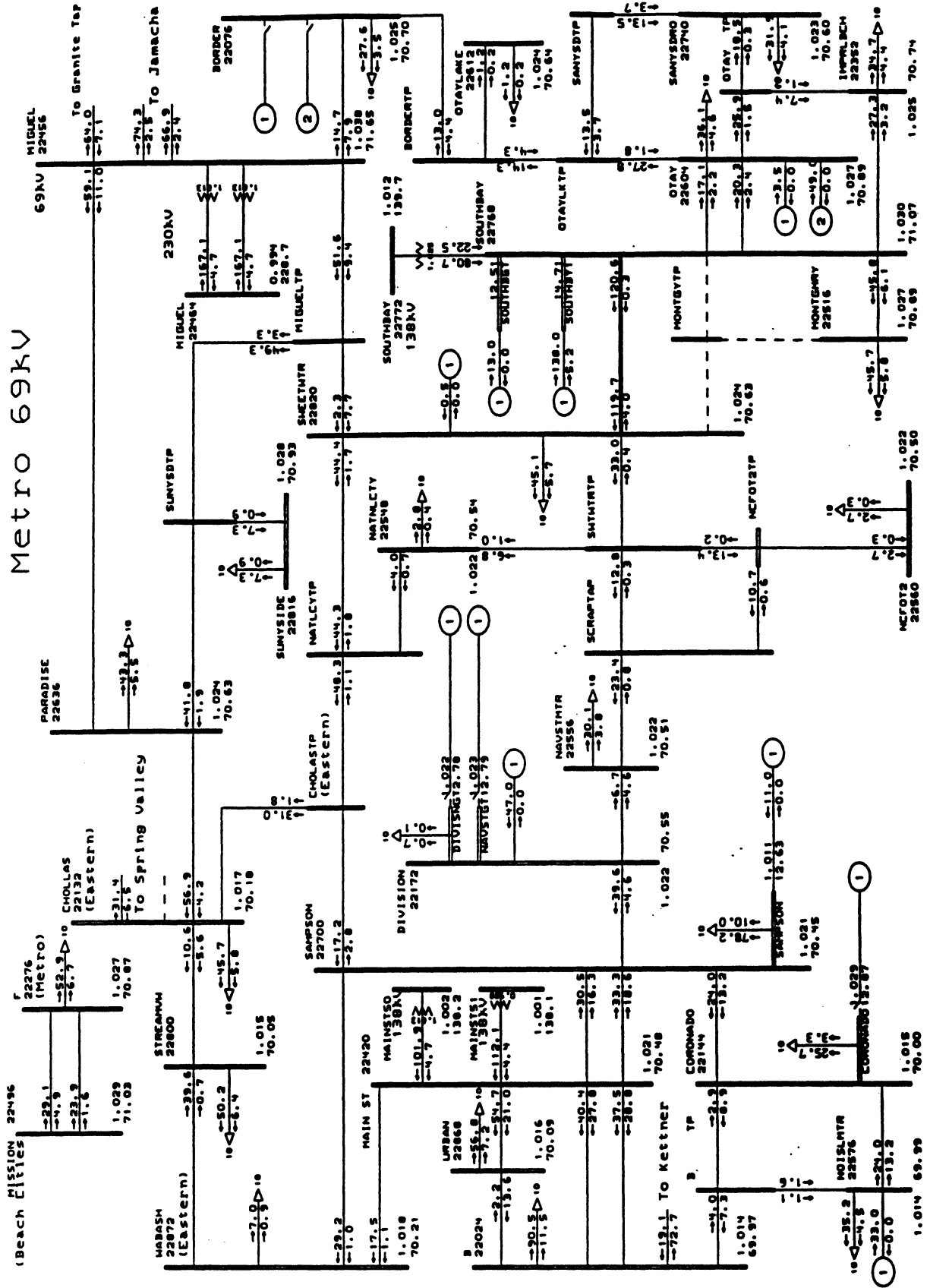
Total South Bay Generation: 690 MW
Otay RFB unit = 49MW

- 1) N-0 Base Case**
- 2) N-1 Sweetwater-South Bay 69kV**
- 3) N-1 Sweetwater-South Bay-Montgomery 69kV**
- 4) N-1 Sweetwater-National City-FOT-Naval Station 69kV**
- 5) N-1 Sweetwater-National City-Chollas-Sampson 69kV**
(With DIGT= 0; NSGT= 0)
- 6) N-1 Sweetwater-National City-Chollas-Sampson 69kV**
(With DIGT= 13; NSGT= 20)

Metro 69kV

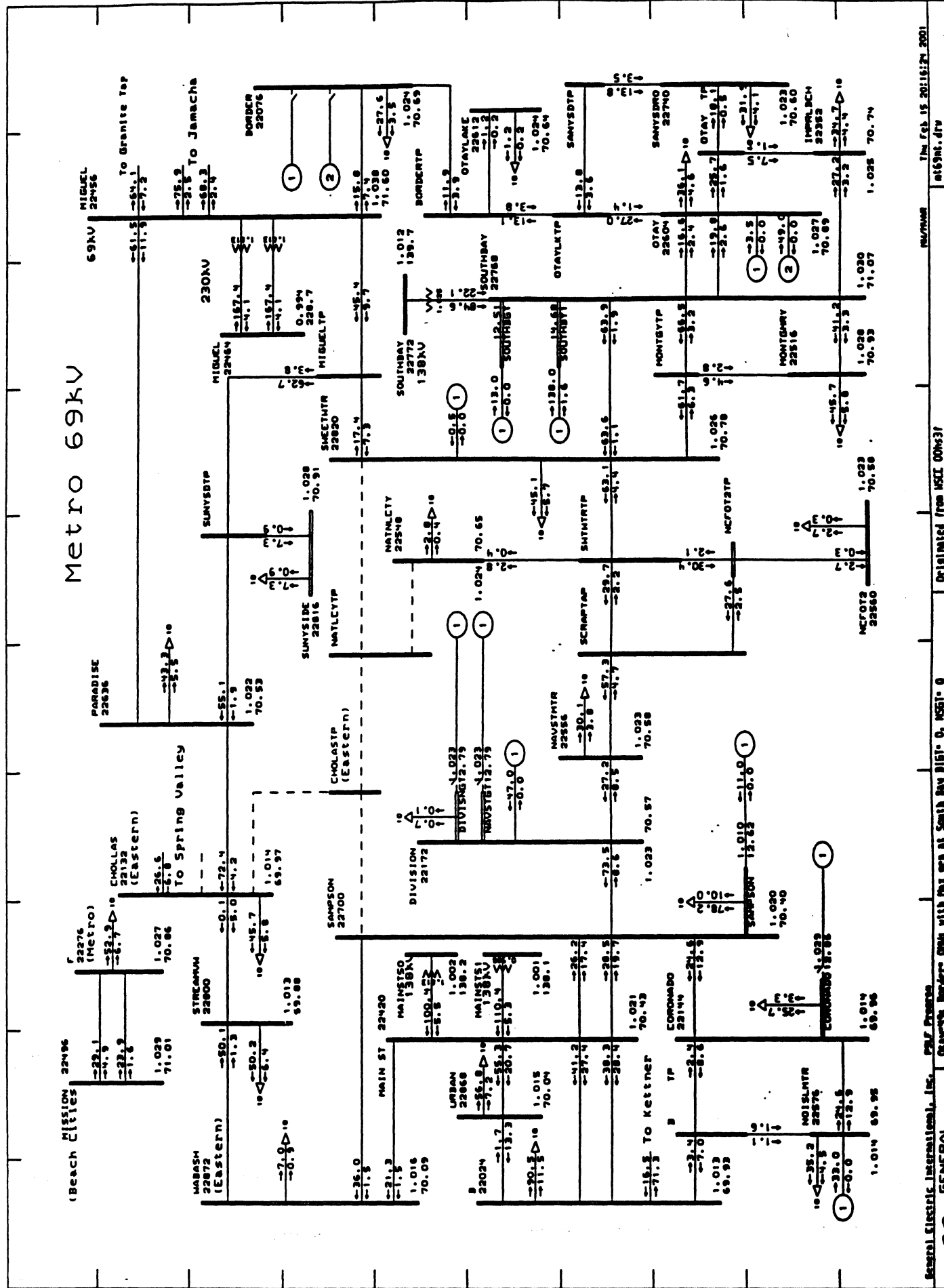


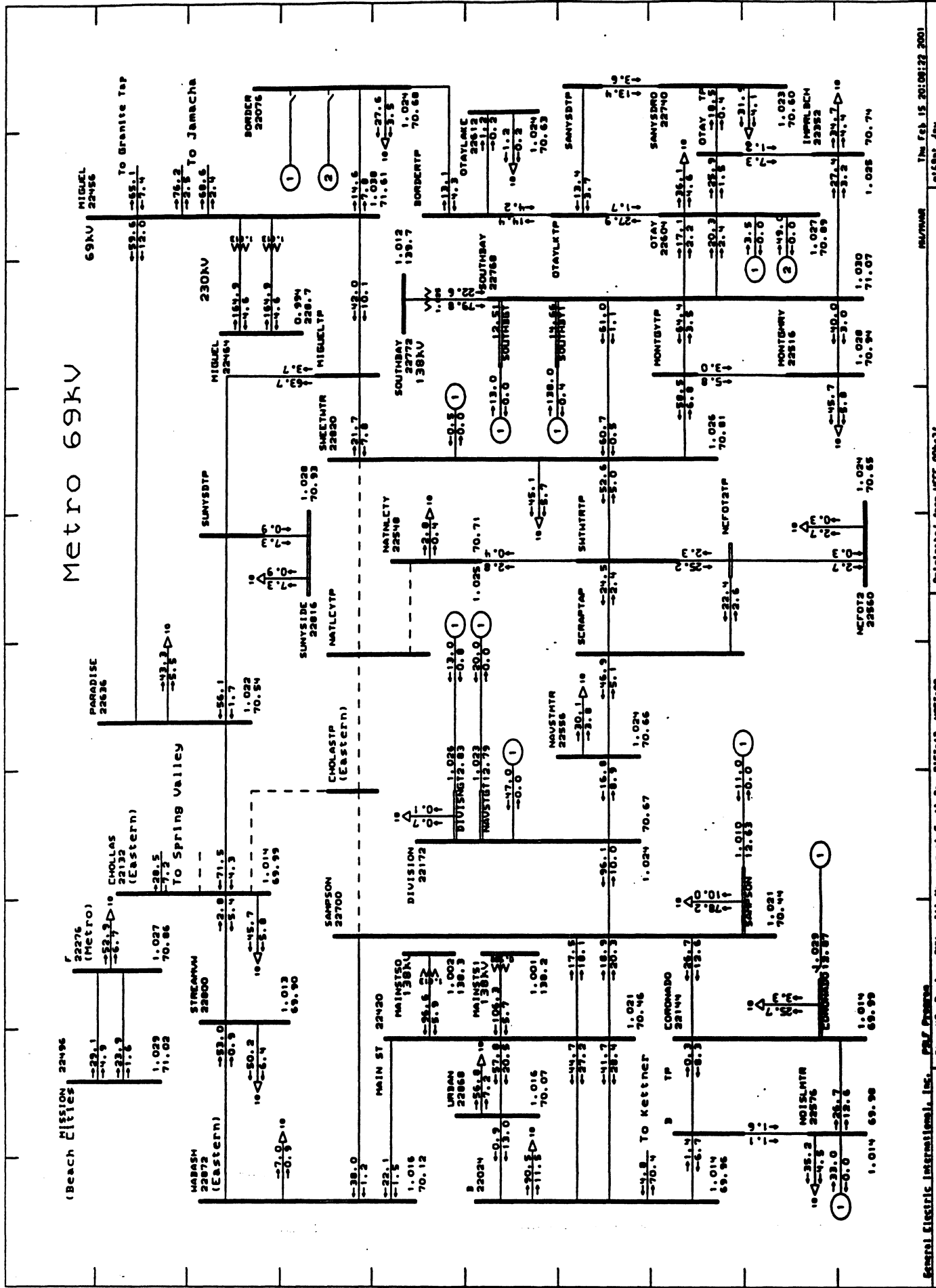
Metro 69kV



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Appendix E-2

Power Flow for Post project Condition

Total South Bay Generation: 690 MW

Otay RFB unit = 49MW

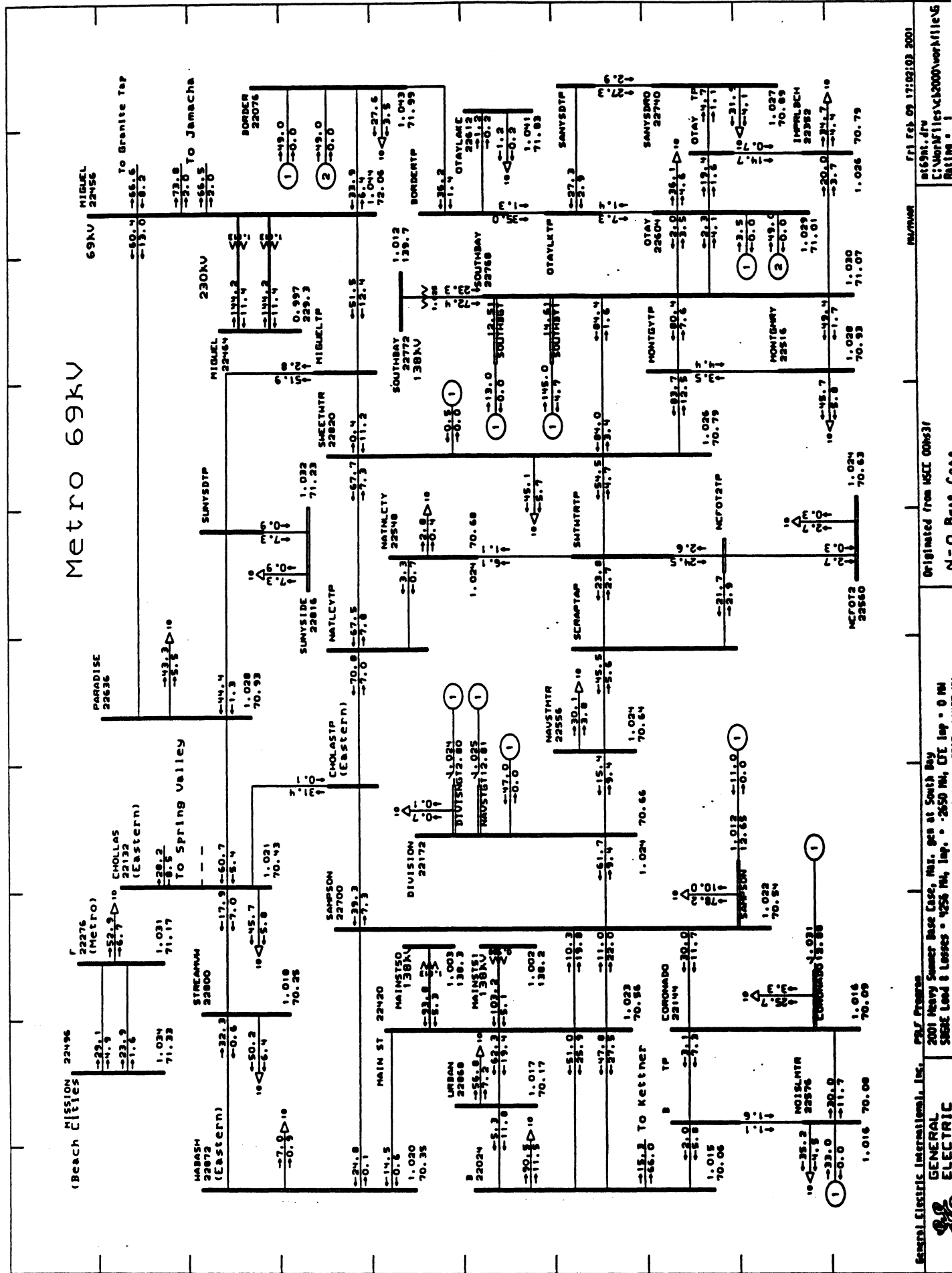
Border RFB 2 units = 98MW

Mission RFB unit = 49MW

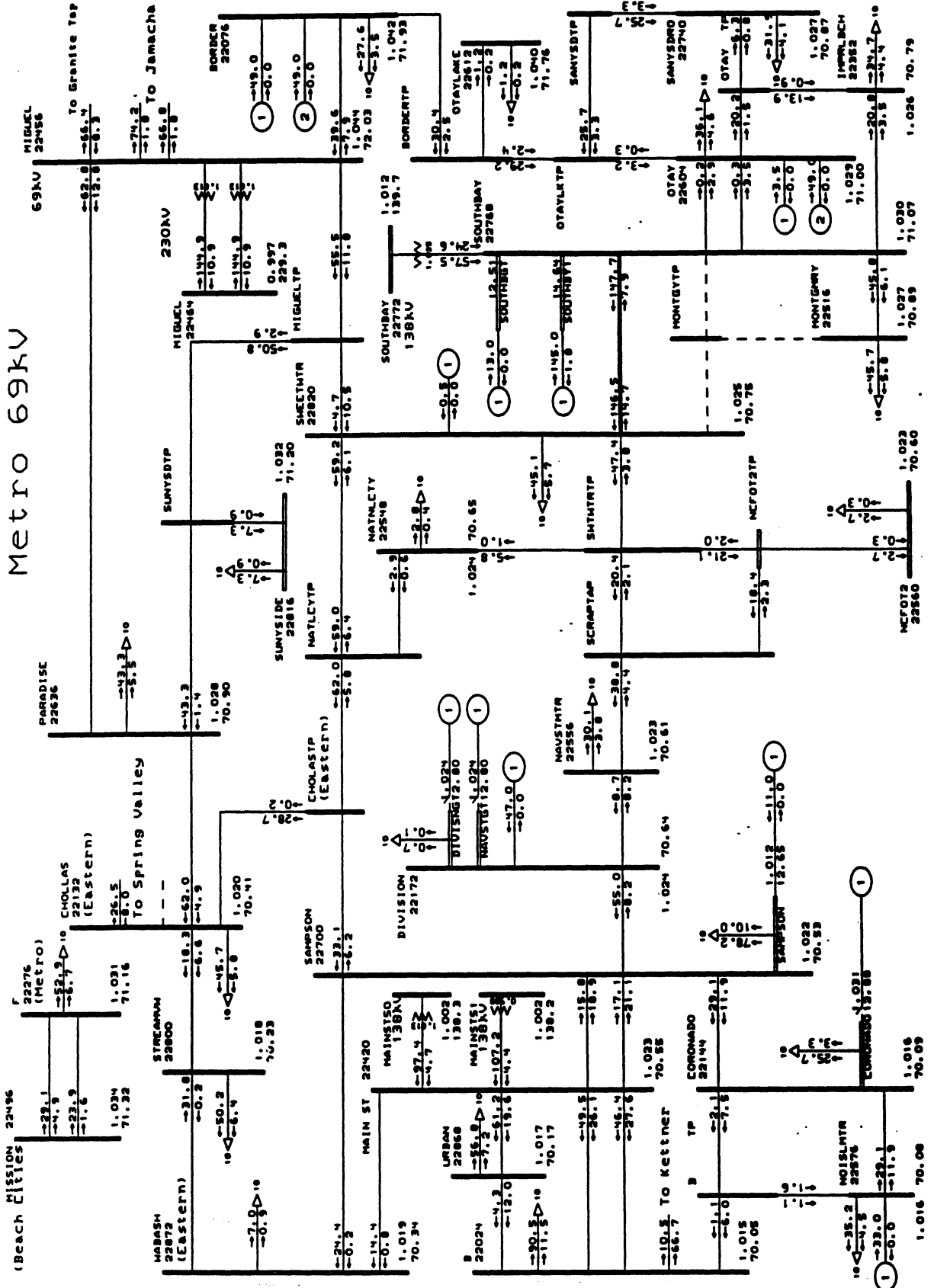
Escondido RFB 2units = 98MW

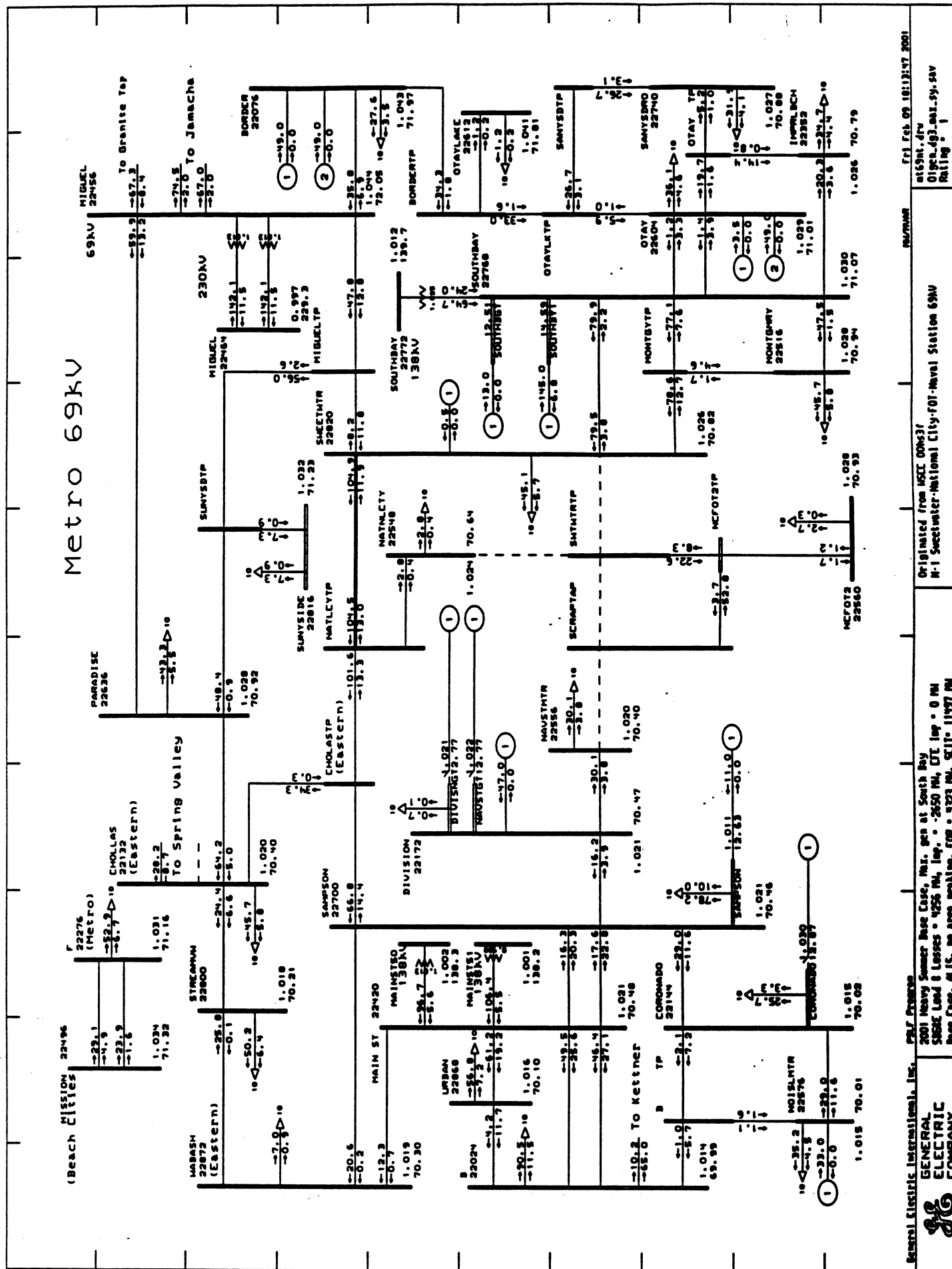
El Cajon RFB unit = 49MW

- 1) N-0 Base Case
- 2) N-1 Sweetwater-South Bay 69kV
- 3) N-1 Sweetwater-South Bay-Montgomery 69kV
- 4) N-1 Sweetwater-National City-FOT-Naval Station 69kV
- 5) N-1 Sweetwater-National City-Chollas-Sampson 69Kv
(With DIGT= 0; NSGT= 0)
- 6) N-1 Sweetwater-National City-Chollas-Sampson 69kV
(With DIGT= 13; NSGT= 20)
- 7) N-1 Border-Miguel 69kV
- 8) N-1 sweetwater-Montgomery 69kV
- 9) N-1 Sampson-Division 69kV
(with DIGT= 13; NSGT= 20)
- 10) N-1 Paradise-Miguel 69kV

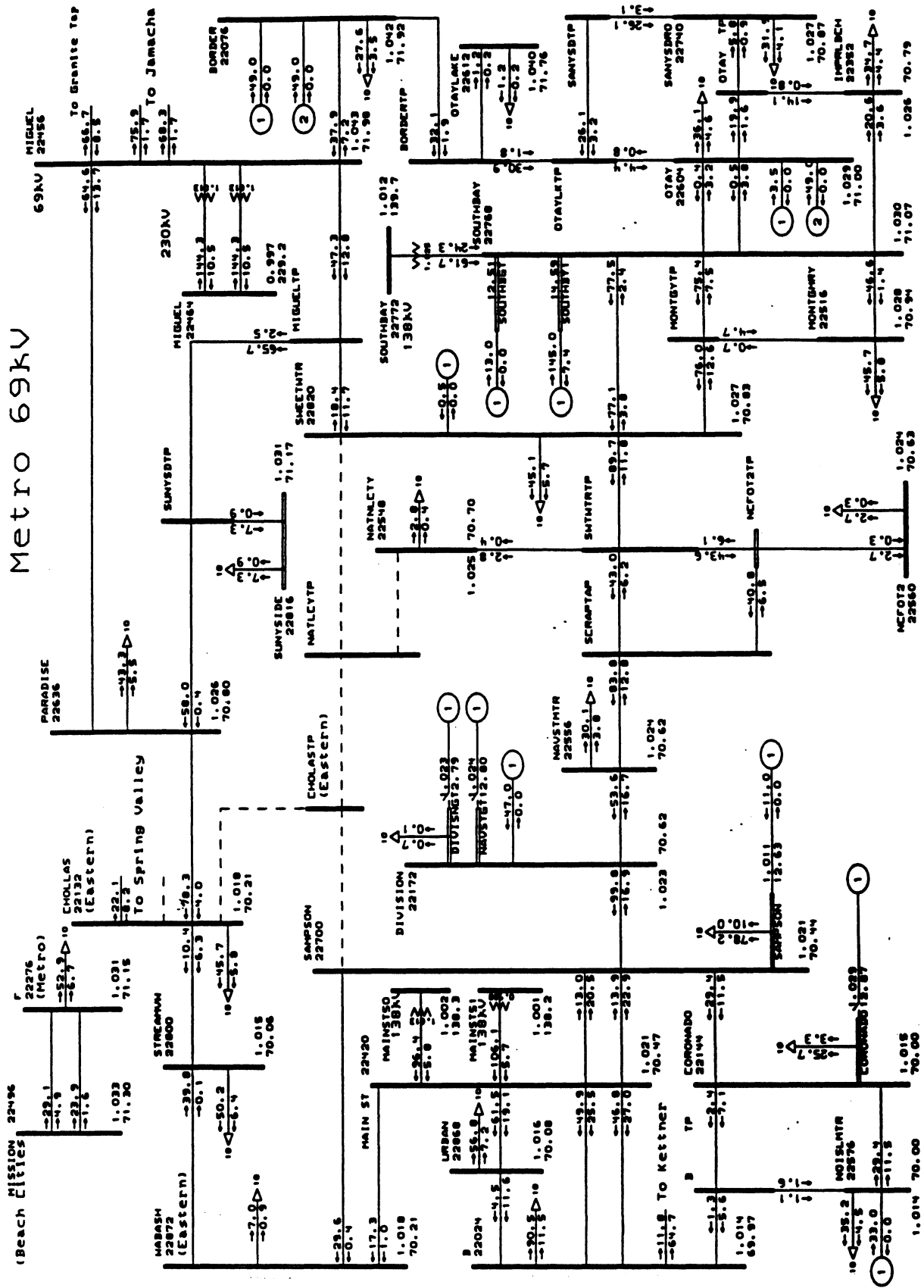


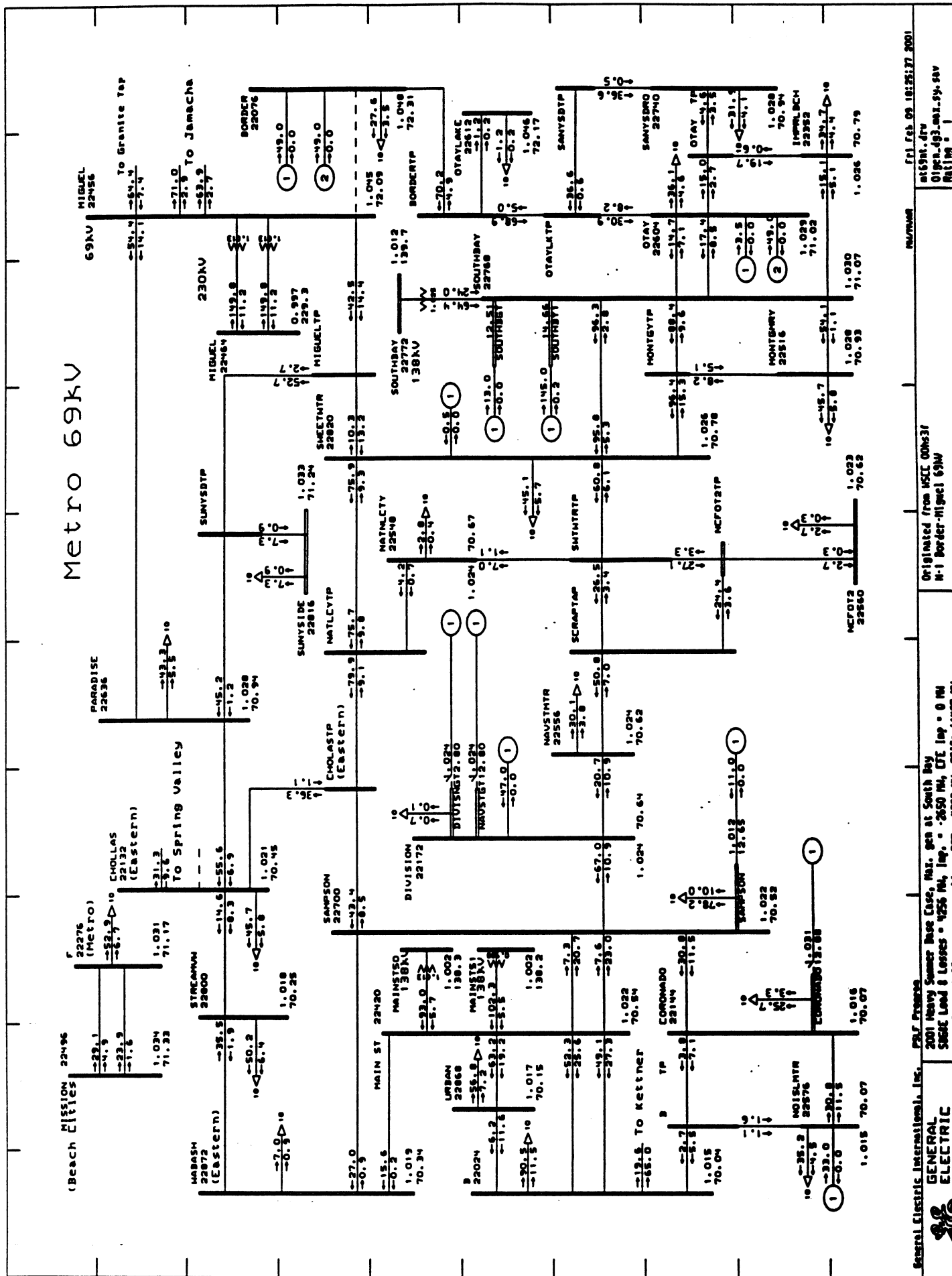
Metro 69kV

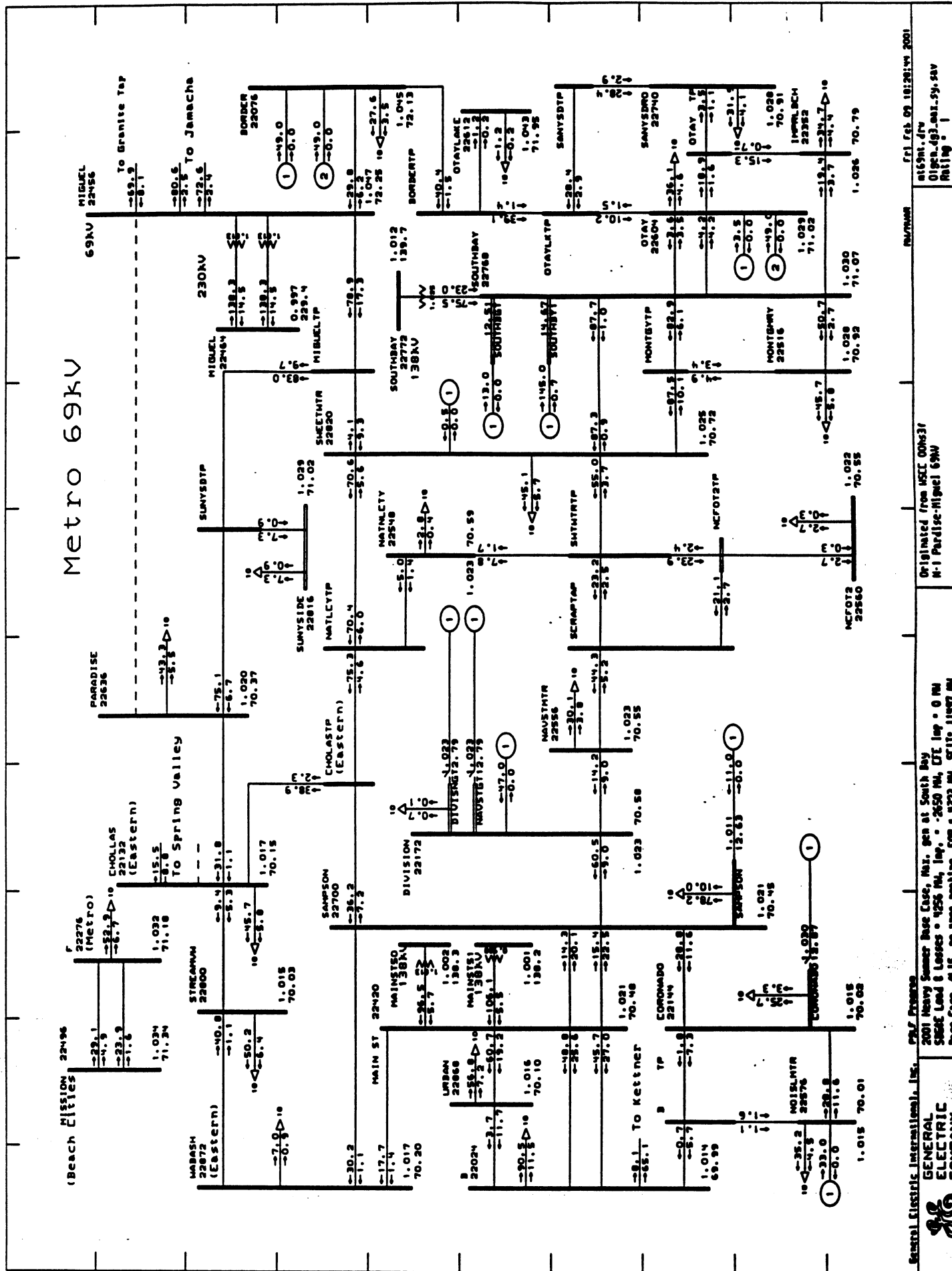




Metro 69kV







APPENDIX F

Sensitivity Study for RFB Dispatch

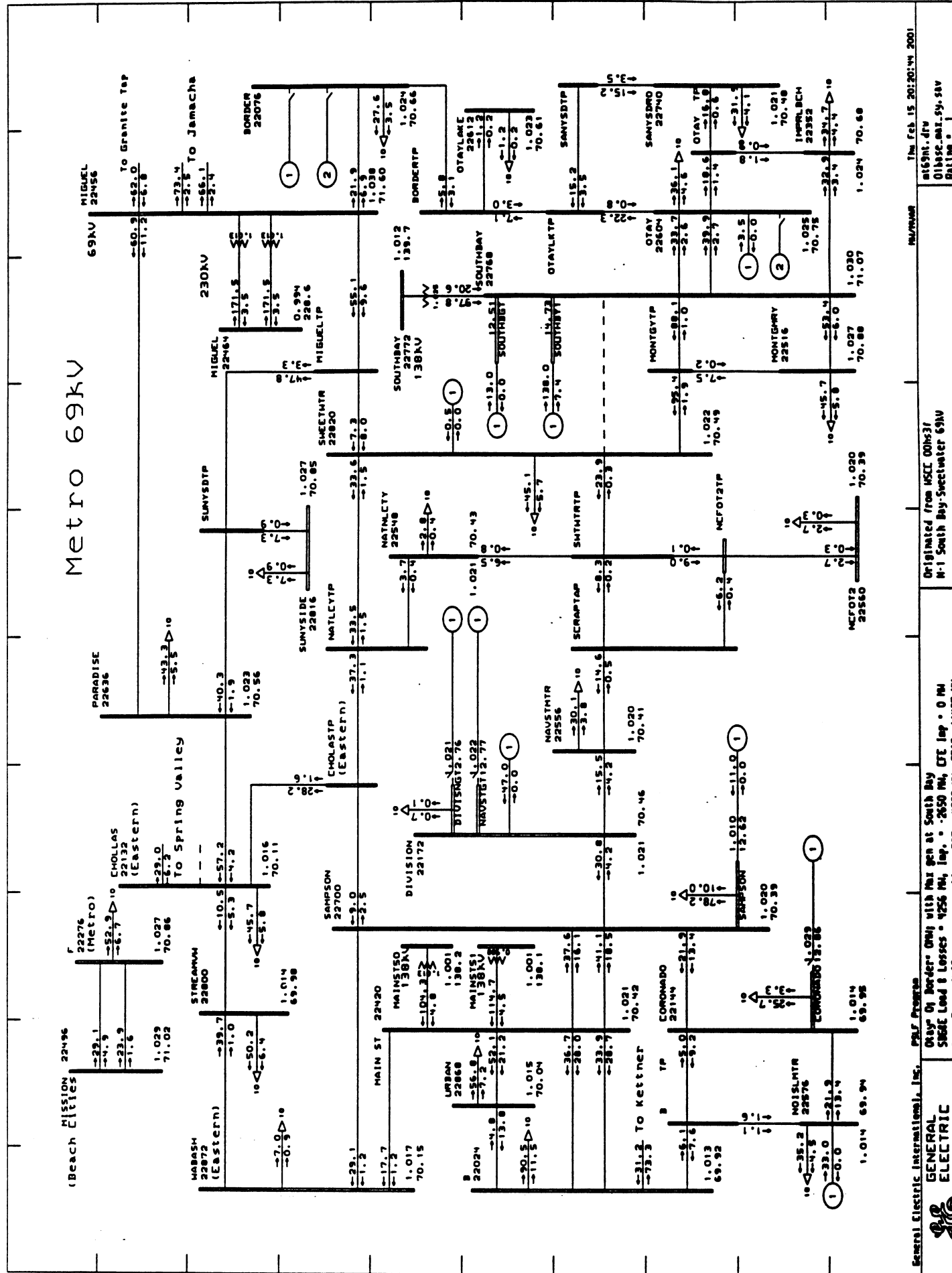
Total South Bay Generation: 690 MW

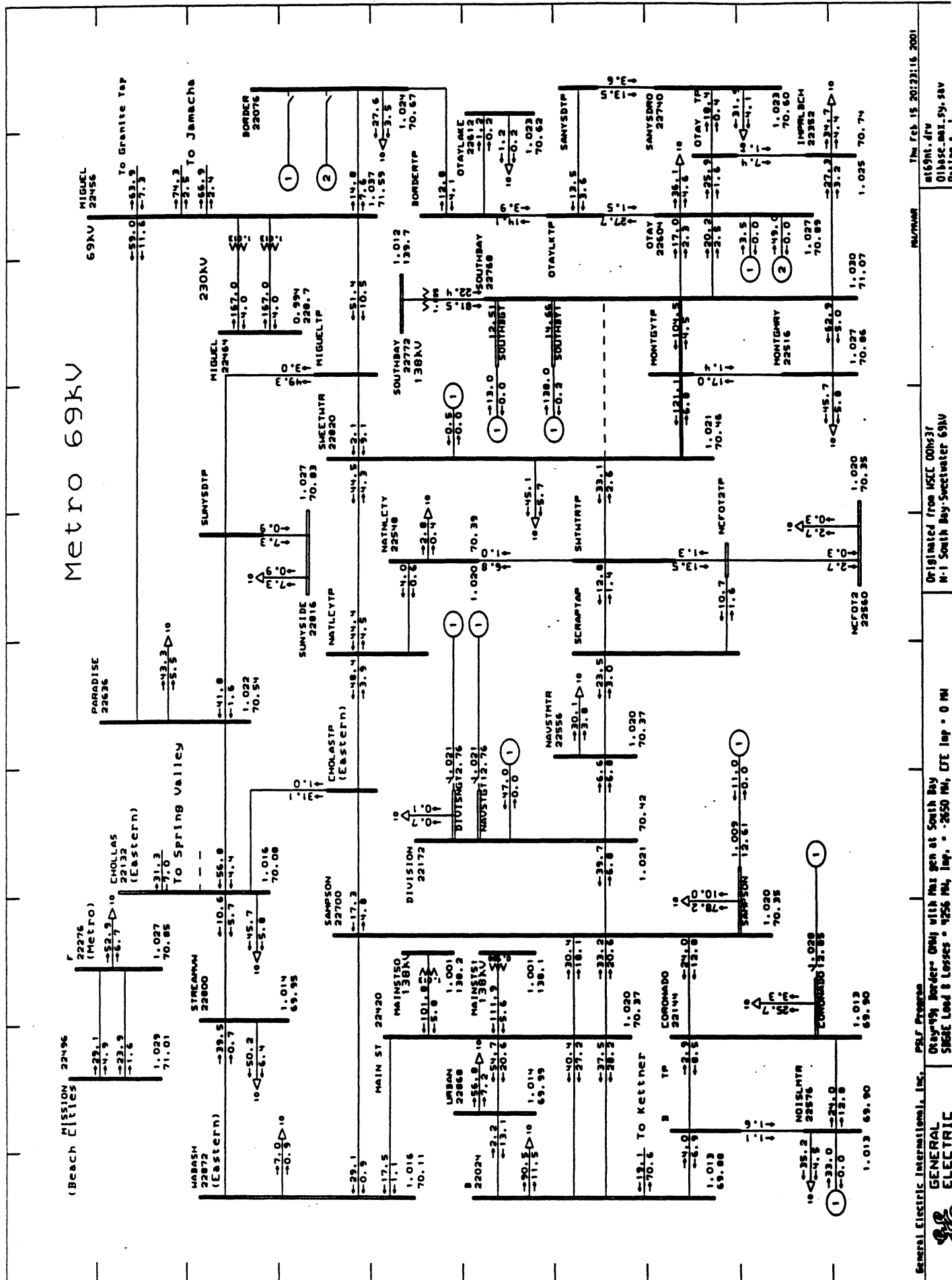
Mission RFB unit = 49MW

Escondido RFB 2units = 98MW

El Cajon RFB unit = 49MW

- 1) N-1 Sweetwater-South Bay 69kV
(Otay unit= 0, Boder= 0)**
- 2) N-1 Sweetwater-South Bay 69kV
(Otay unit= 49, Boder= 0)**
- 3) N-1 Sweetwater-South Bay 69kV
(Otay unit= 49, Boder= 49)**
- 4) N-1 Sweetwater-South Bay 69kV
(Otay unit= 49, Boder= 98)**





APPENDIX G

Sensitivity Study for South Bay Dispatch

Maximum generation at 69kV and reduce 138kV generation

Reduce 69kV generation and maximum 69kV generation

Appendix G-1

South Bay Generation Dispatch Sensitivity

Maximum generation at 138kV and reduce 69kV generation

South Bay 69kV Generation (unit 1 & SYGT): 158 MW

South Bay 138kV generation (unit 2, 3, 4): 118 MW

Otay RFB unit = 49MW

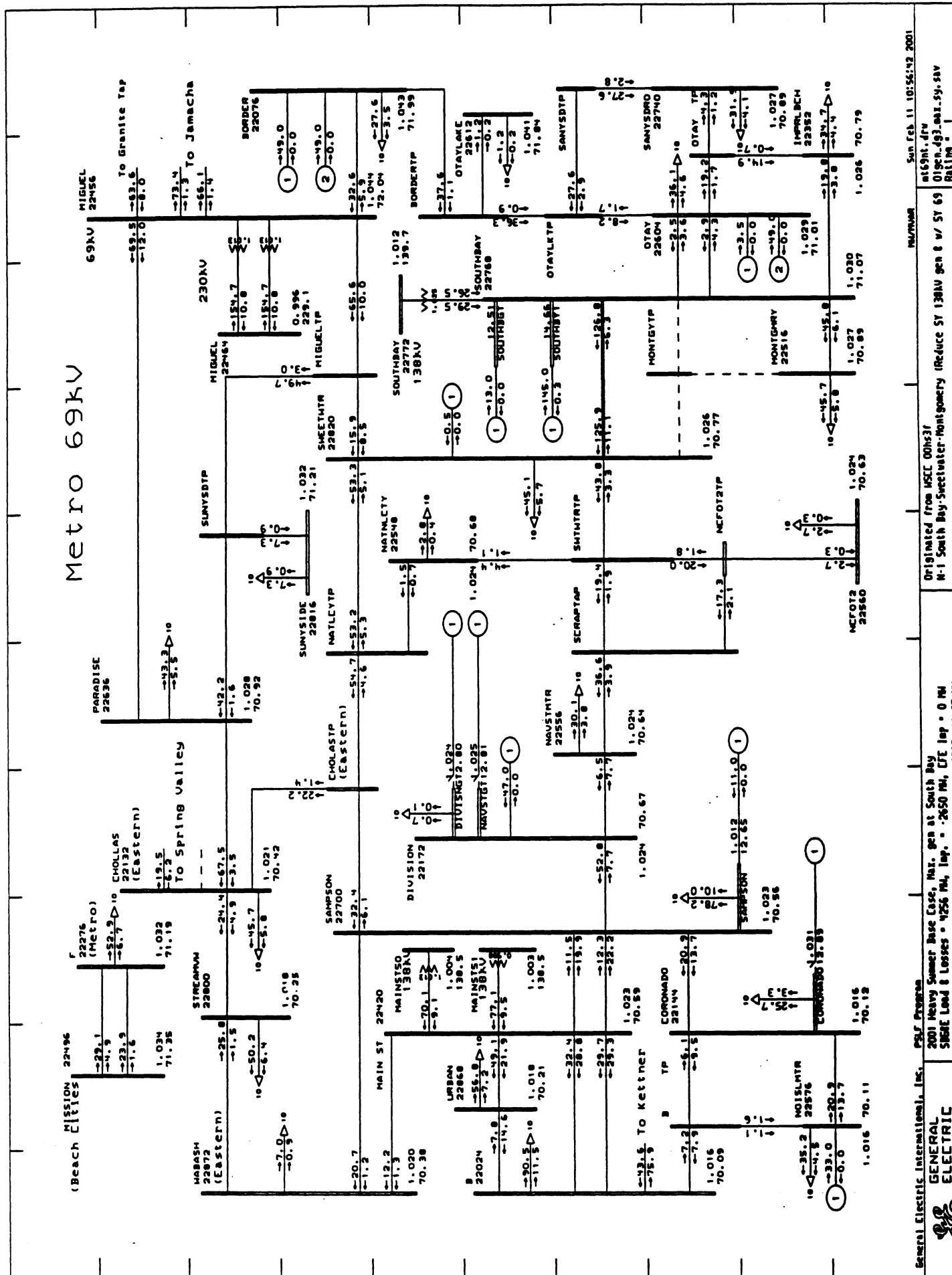
Border RFB 2 units = 98MW

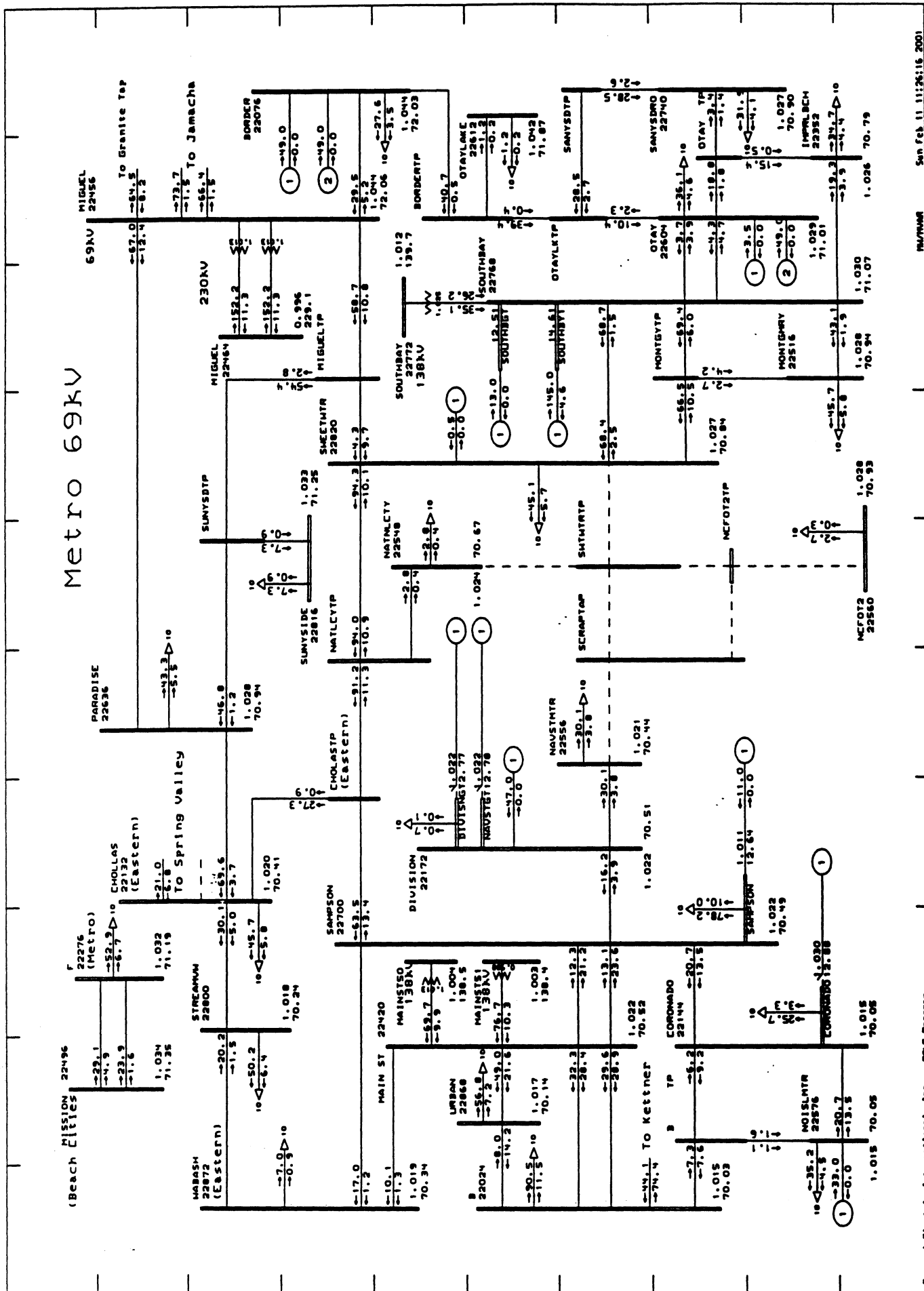
Mission RFB unit = 49MW

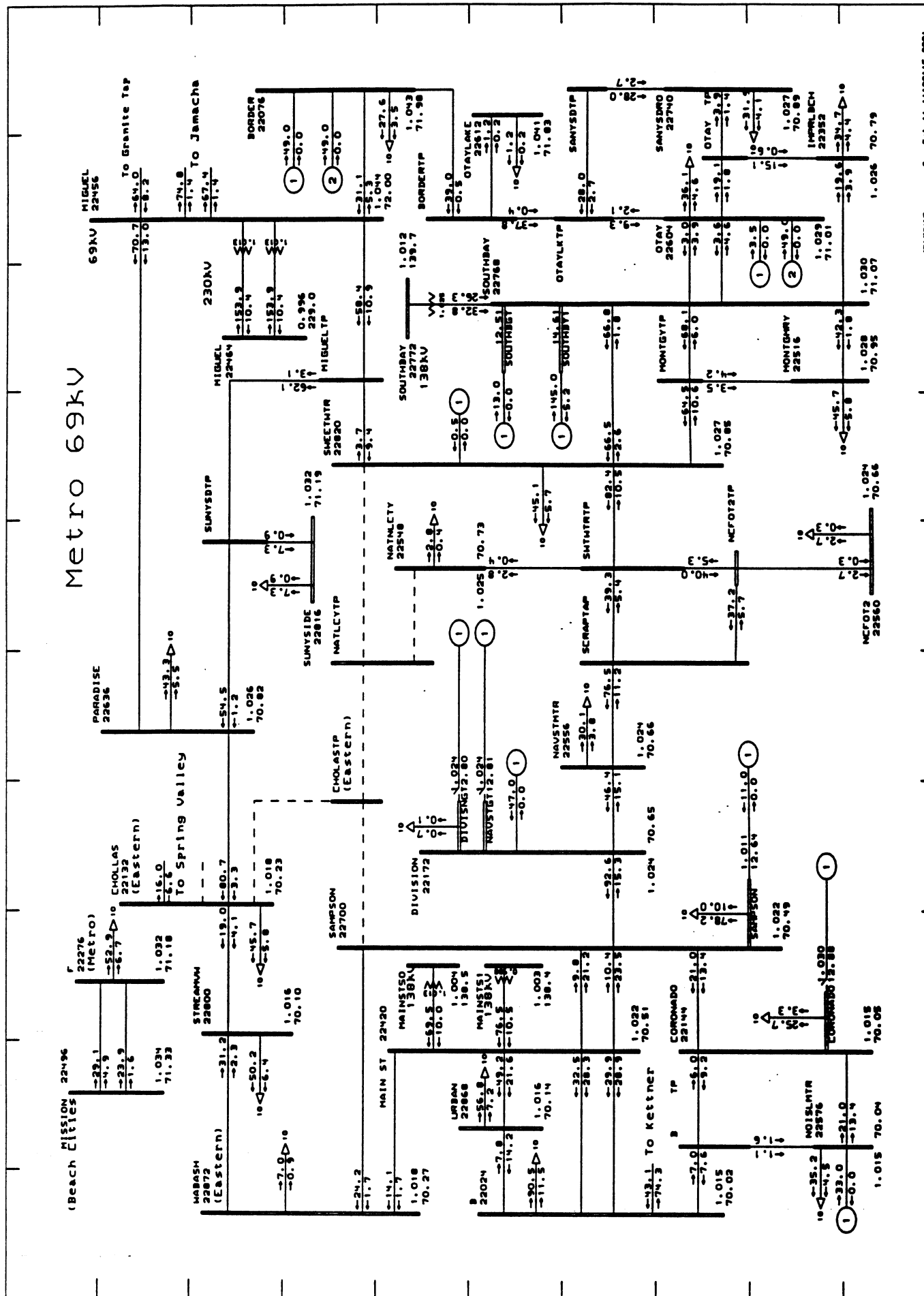
Escondido RFB 2 units = 98MW

El Cajon RFB unit = 49MW

- 1) N-0 Base Case
- 2) N-1 Sweetwater-South Bay 69kV
- 3) N-1 Sweetwater-South Bay-Montgomery 69kV
- 4) N-1 Sweetwater-National City-FOT-Naval Station 69kV
- 5) N-1 Sweetwater-National City-Chollas-Sampson 69Kv
(With DIGT= 0; NSGT= 0)
- 6) N-1 Sweetwater-National City-Chollas-Sampson 69kV
(With DIGT= 13; NSGT= 20)







Appendix G-2

South Bay Generation Dispatch Sensitivity

Maximum generation at 69 kV and reduce 138kV generation

South Bay 69kV Generation (unit 1 & SYGT): 58 MW

South Bay 138kV generation (unit 2, 3, 4): 532 MW

Otay RFB unit = 49MW

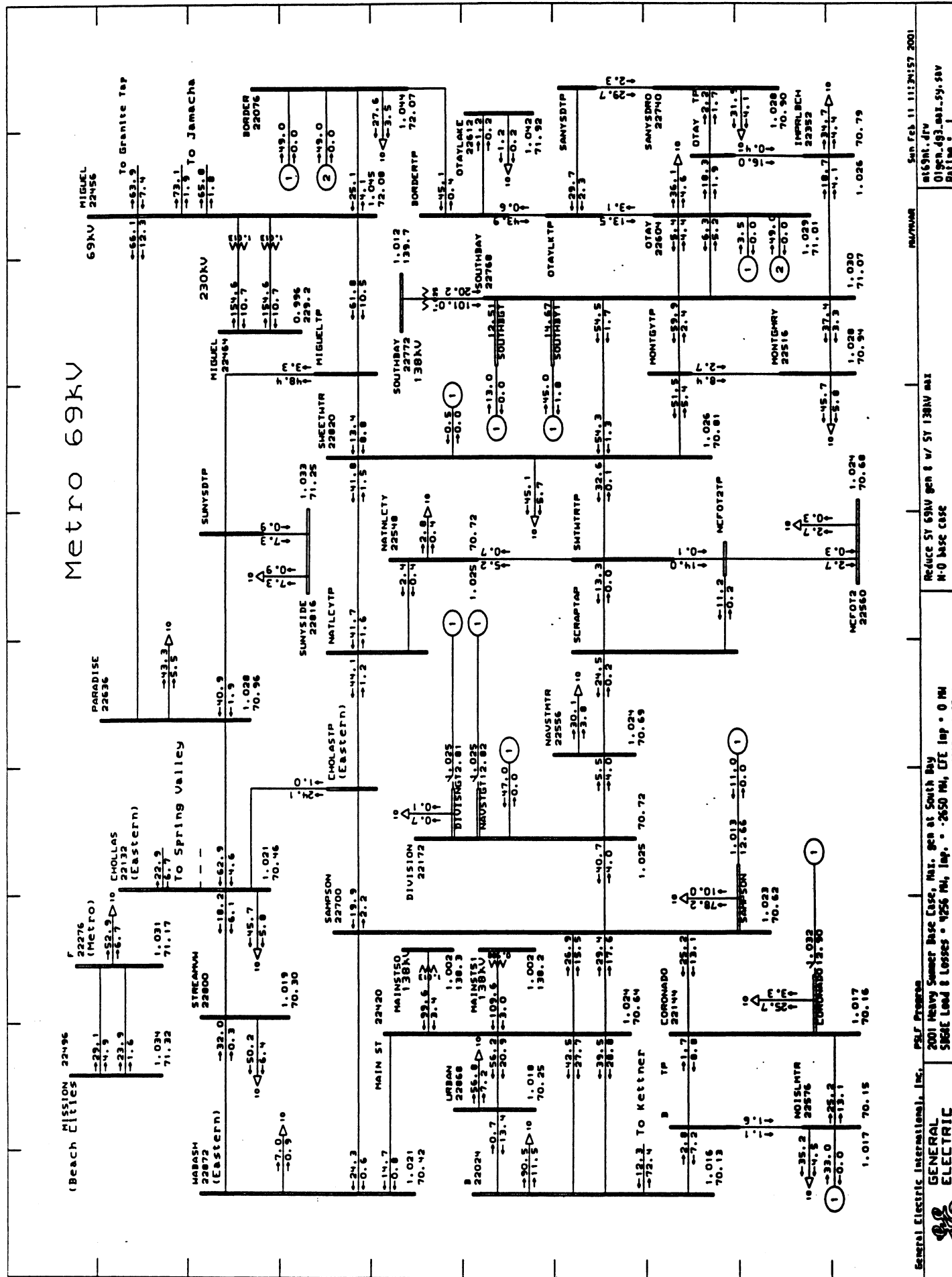
Border RFB 2 units = 98MW

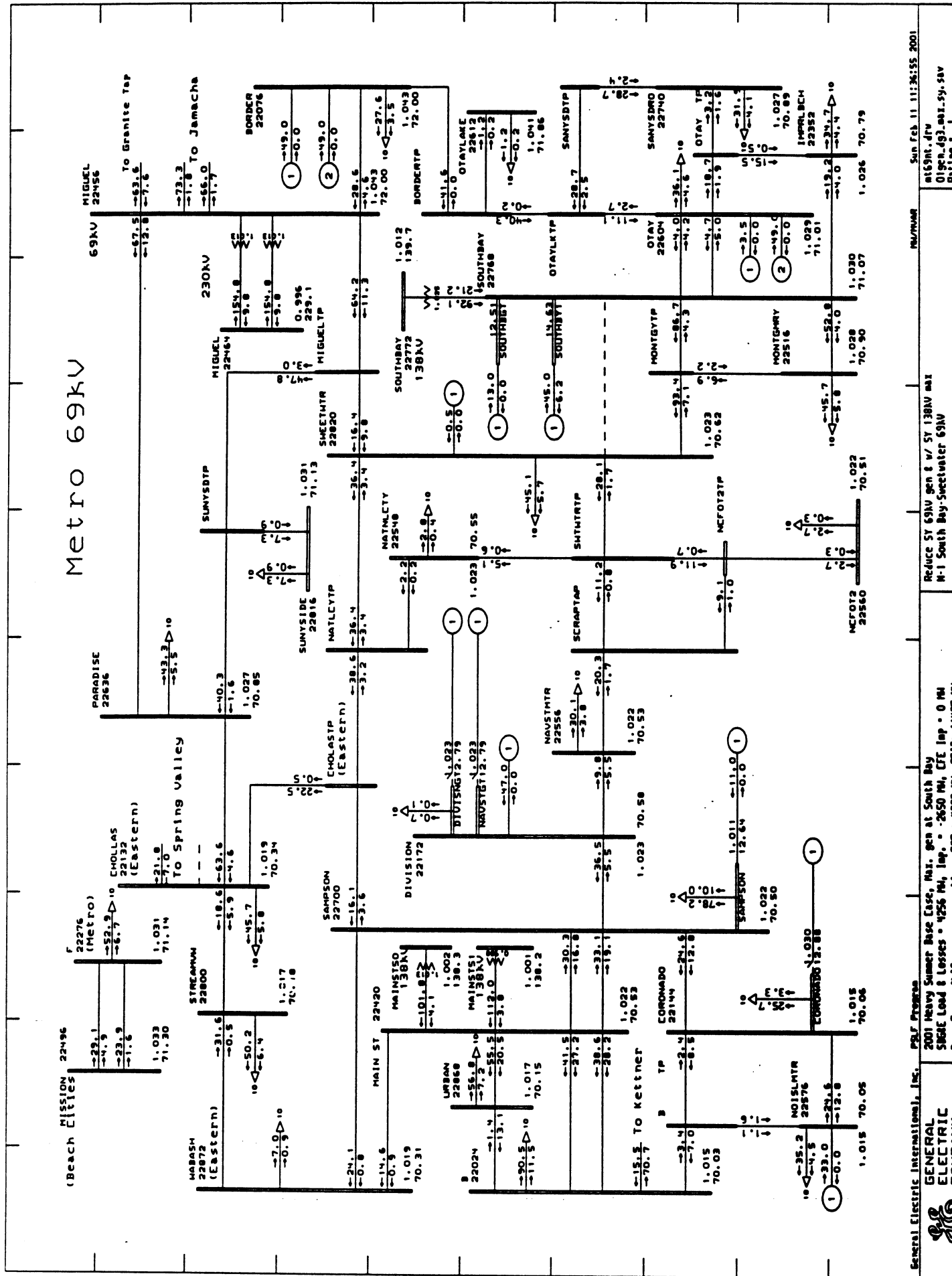
Mission RFB unit = 49MW

Escondido RFB 2 units = 98MW

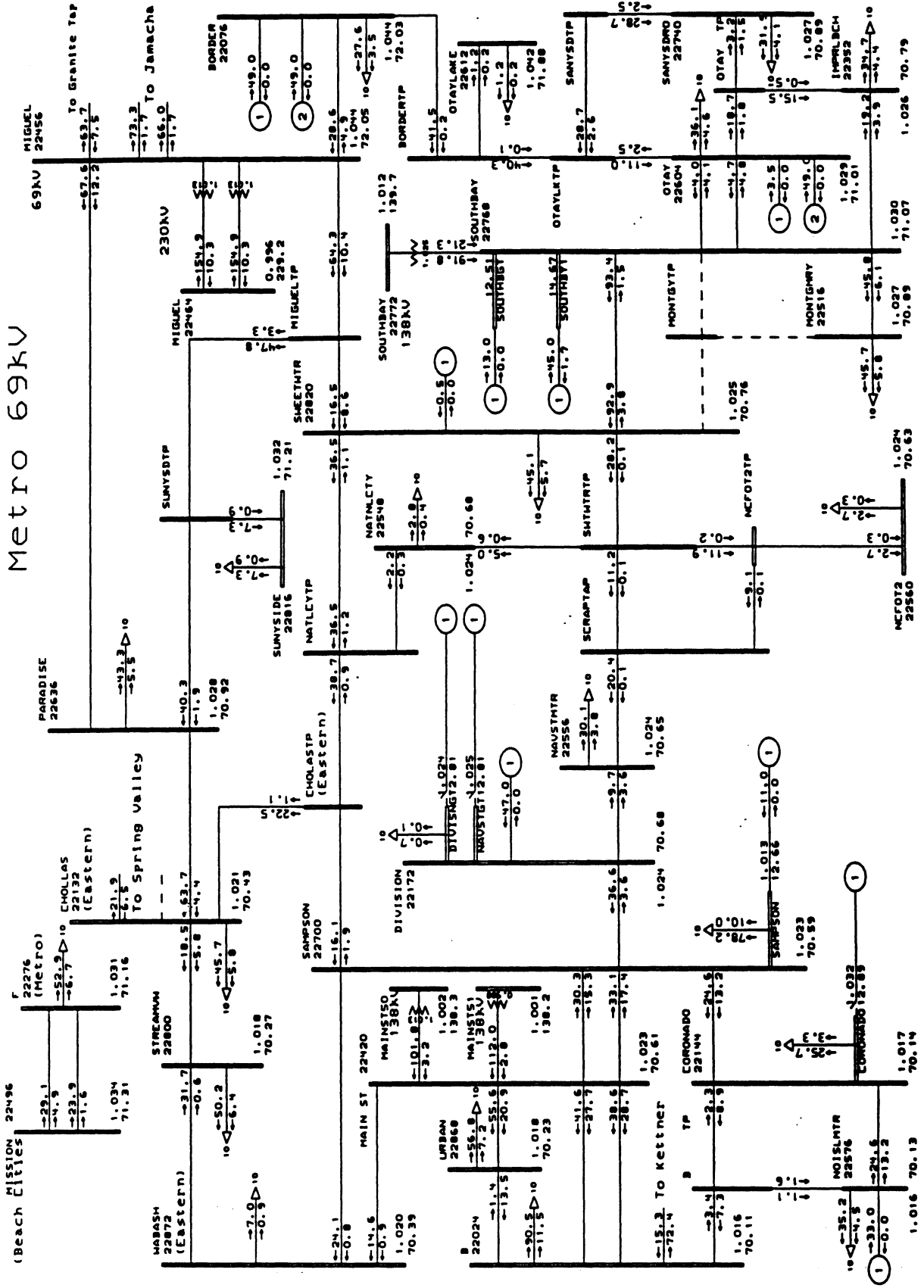
El Cajon RFB unit = 49MW

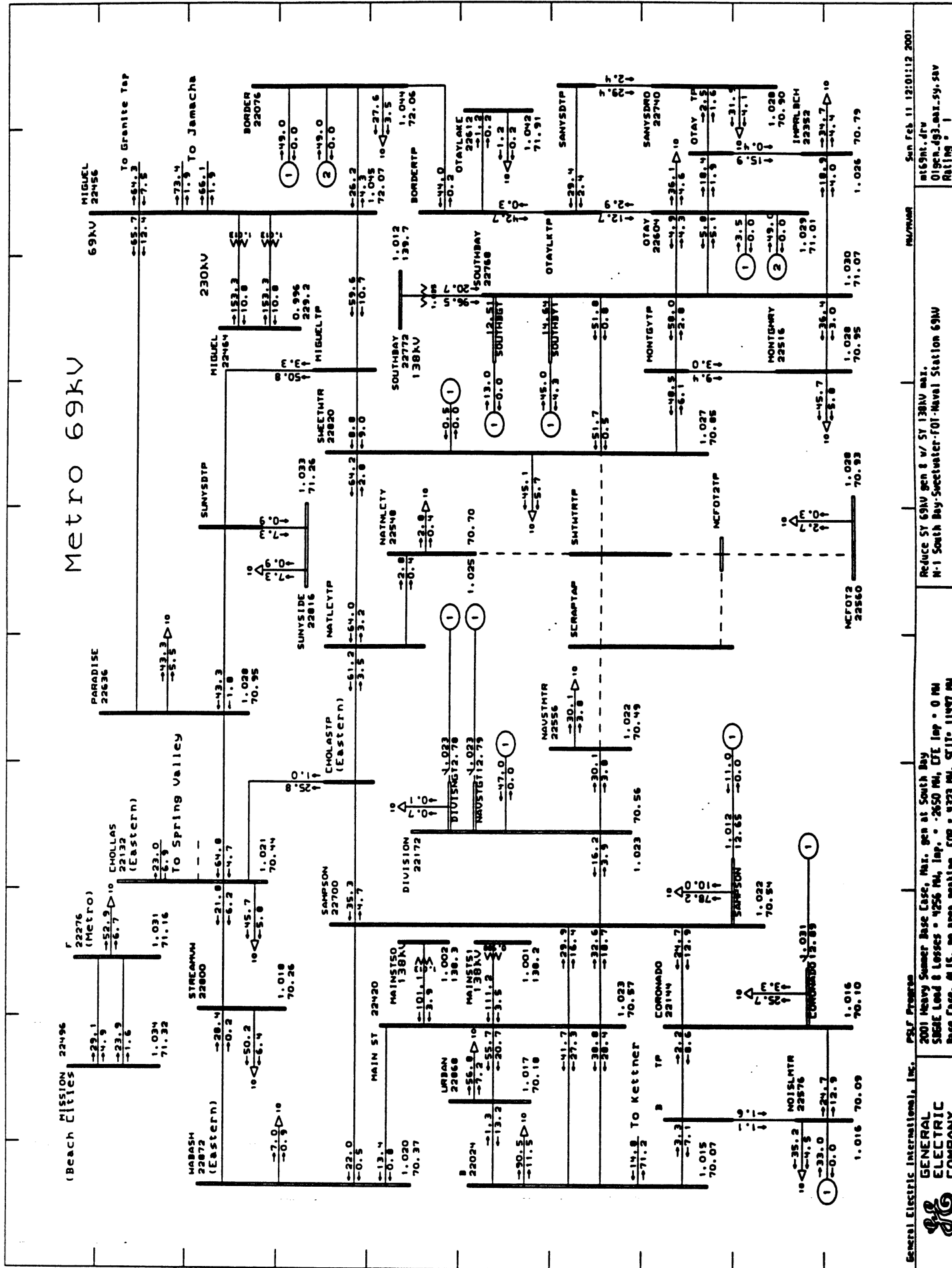
- 1) N-0 Base Case
- 2) N-1 Sweetwater-South Bay 69kV
- 3) N-1 Sweetwater-South Bay-Montgomery 69kV
- 4) N-1 Sweetwater-National City-FOT-Naval Station 69kV
- 5) N-1 Sweetwater-National City-Chollas-Sampson 69Kv
(With DIGT= 0; NSGT= 0)
- 6) N-1 Sweetwater-National City-Chollas-Sampson 69kV
(With DIGT= 13; NSGT= 20)



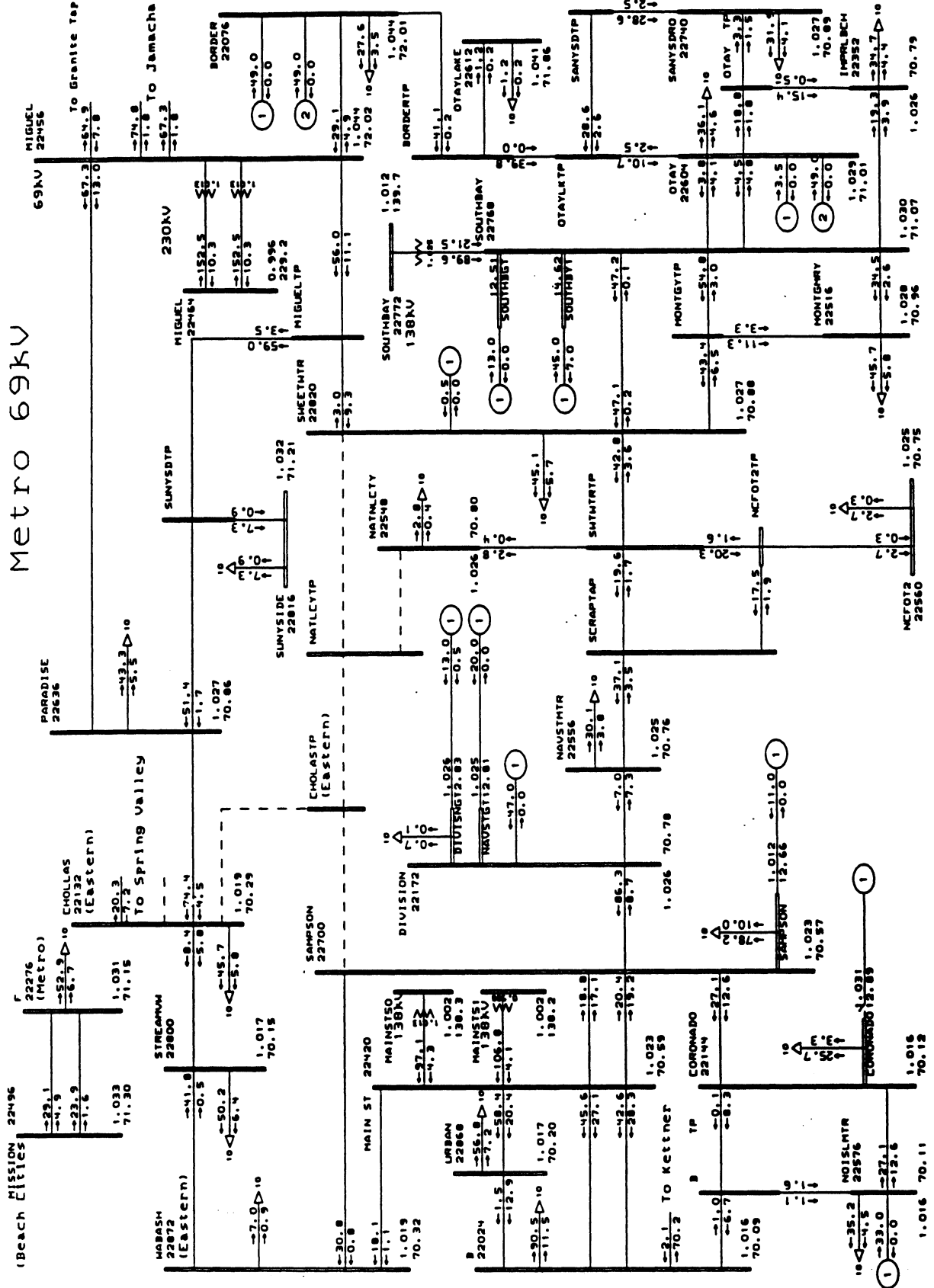


Metro 69kV





Metro 69kV



APPENDIX H

Short Circuit study

Generator Data

Generators at 0DG 138 13.8kV

Unit 1 On-Line

Edit

On/Off-Line

Delete

New

Ref. angle= 0.

Power Flow Regulation

Hold V= 1. pu

At 0DG 138 13.8kV 0 (PV)

☒ Regulates voltage
☐ Fixed P+Q output

Done

Last changed Feb 13, 2001

Help

Generating Unit Info

ID= 1 Unit rating= 69.224 MVA

Impedances (pu based on unit MVA)

Subtransient 0. +j 0.14 F

Transient 0. +j 0.14

Synchronous 0. +j 0.14

- sequence 0. +j 0.14

0 sequence 0. +j 0.09

Neutral Impedance (in actual Ohms)

0. +j 0.

Scheduled generation (MW)

0.

P and Q limits (MW and MVAR)

Pmax= 9999. Qmax= 9999.
Pmin= -9999. Qmin= -9999.

OK

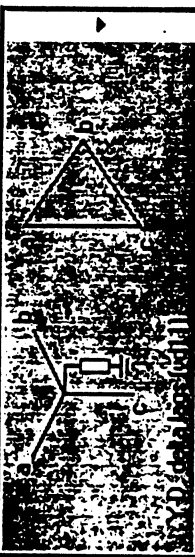
Cancel

Help

2-Winding Transformer Data

0 DG 138 13.8kV 0 DG 69 69kV

Name= DG Ckt ID= 1 MVA= 0 R= 0.00694 X= 0.2083



B= 0

Ro= 0.00694 Xo= 0.2083

Bo= 0

Metered at:

DG 138 13.8kV

DG 138 13.8kV

Tap kV= 13.8

G1= 0

B1= 0

G10= 0

B10= 0

DG 69 69 kV

Tap kV= 69

G2= 0

B2= 0

G20= 0

B20= 0

Neutral grounding Z (ohms)

Zg1= 0 +j 0

LTC...

Swap sides

OK

Cancel Help

Last changed Feb 13, 2001

Short Circuit for El Cajon generation

			% of Short Circuit Duty with 2001 RFB Generators	
	Continuous Rating (Amps)	Interrupting Rating (Amps)	EC= 0 unit	EC= 1 unit
EL Cajon 69kV bus			20062 A	22079 A
BK30	12000	29000	69%	76%
BK31	12000	26000	77%	85%
BK32	12000	26000	77%	85%
BK33	12000	26000	77%	85%
TL620	12000	27000	49%	57%
TL624	12000	21000	68%	77%
TL630	12000	26000	65%	73%
TL631	12000	26000	64%	72%

Short Circuit Short for Escondido Generation unit

			% of Short Circuit Duty with 2001 RFB Generators		
	Continuous Rating (Amps)	Interrupting Rating (Amps)	ES= 0 unit	ES= 1 unit	ES= 2 units
Escondido 69kV bus			33339 A	35215 A	37093 A
BK30	2000	40000	83%	88%	93%
BK31	2000	40000	83%	88%	93%
BK32	2000	40000	83%	88%	93%
BK50	2000	40000	78%	82%	87%
BK70	2000	40000	68%	73%	77%
BK71	2000	40000	68%	73%	77%
BK72	2000	40000	68%	73%	77%
TL616	2000	40000	77%	81%	86%
TL679	2000	40000	81%	86%	90%
TL684	2000	40000	76%	81%	85%
TL688	2000	40000	81%	85%	90%
TL689	2000	40000	81%	85%	90%
TL6908	2000	40000	76%	80%	85%
TL696	2000	40000	82%	86%	91%

Short Circuit Study for Mission Generation unit

			% of Short Circuit Duty with 2001 RFB Generators	
	Continuous Rating (Amps)	Interrupting Rating (Amps)	MS= 0 unit	MS= 1 unit
Mission 69kV bus			43970 A	45846 A
BK30	2000	42000	105%	109%
BK31	2000	40000	110%	115%
BK32	2000	40000	110%	115%
BK33	2000	38000	116%	121%
BK50	2000	41000	89%	94%
BK51	2000	41000	98%	102%
BK52	2000	41000	90%	95%
BK70	2000	40000	91%	96%
TL618	2000	42000	99%	104%
TL619	2000	38000	110%	115%
TL653	2000	42000	105%	109%
TL654	2000	38000	116%	121%
TL663	2000	42000	95%	100%
TL670	2000	42000	100%	105%
TL671	2000	40000	99%	104%
TL676	2000	40000	100%	105%

APPENDIX I

Transient Stability Study

Assumption

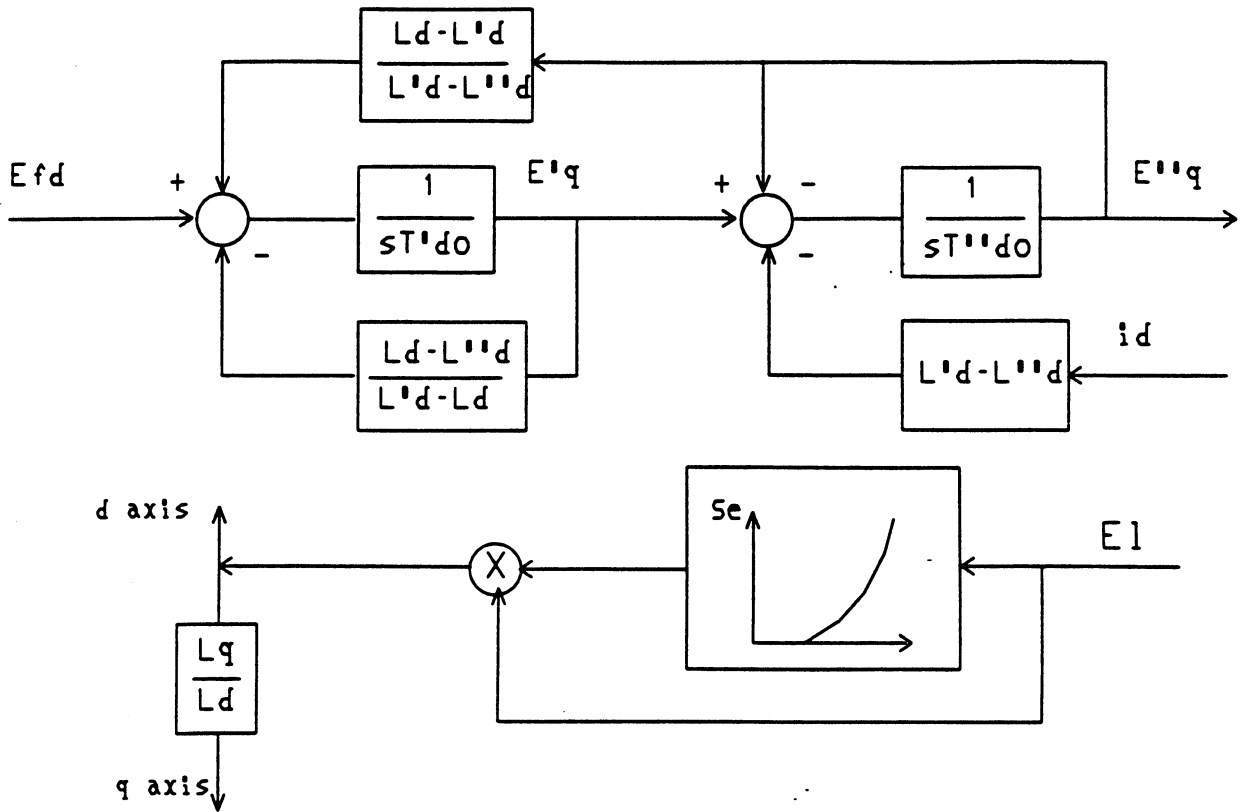
Generator Model

Excitaton Model

Governor Model

Study Cases

Case1	3 phase bus fault at Border 69 kV bus and trip Border generator
Case2	3 phase bus fault at El Cajon 69 kV bus and trip El Cajon generator
Case3	3 phase bus fault at Mission 69 kV bus and trip Mission generator
Case4	3 phase bus fault at Escondido 69 kV bus and trip Escondido generator

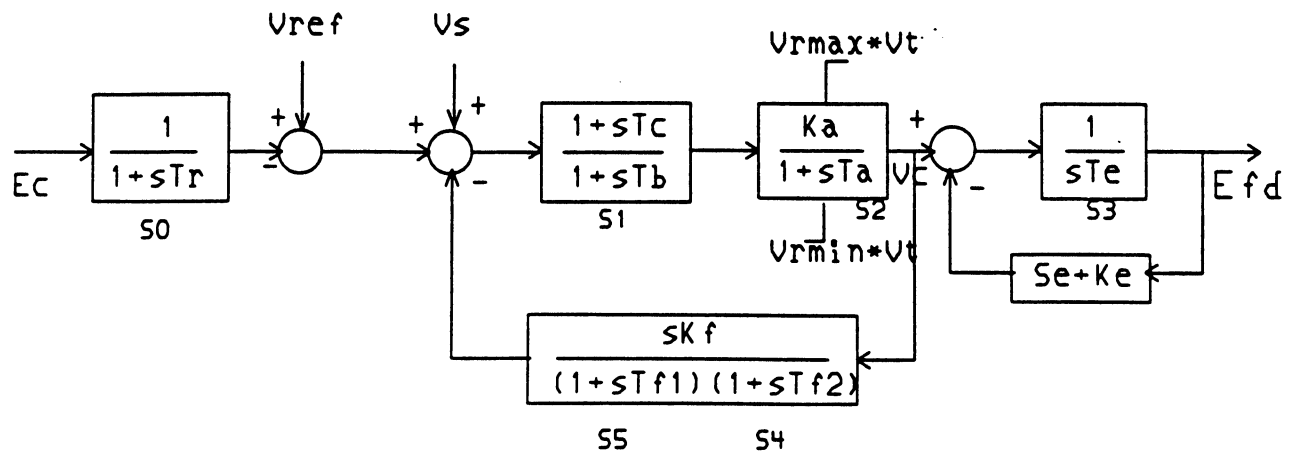


Thu Feb 15 22:00:12 2001

gentpf

22076 BORDER 69.0 1

ld	2.2800	s12	0.4000
lpd	0.2400	h	1.0200
lppd	0.1800	d	0.0000
lq	2.0900	rcomp	0.0000
lpq	0.3600	xcomp	0.0000
lppq	0.2100	accel	1.0000
ll	0.0800		
ra	0.0050		
tpdo	9.7000		
tppdo	0.0500		
tpqo	2.9000		
tppqo	0.0500		
s1	0.1000		



Thu Feb 15 22:02:51 2001

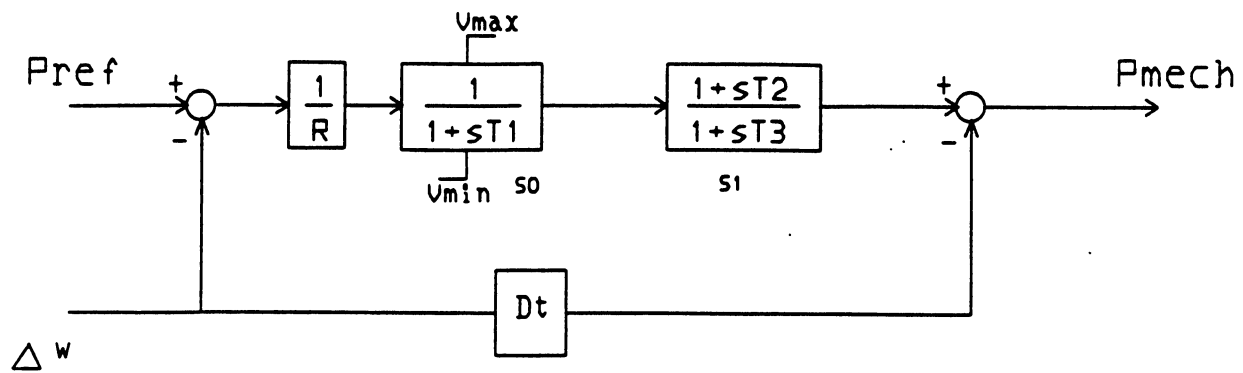
exdc2

22076 BORDER 69.0 1

tr	0.0220	se1	1.8800
ka	2406.0000	e2	15.0380
ta	0.1000	se2	3.1200
tb	0.0000		
tc	0.0000		
vrmax	39.2000		
vrmin	0.0000		
ke	1.0000		
te	1.3000		
kf	0.0210		
tf1	0.5000		
tf2	1.3000		
e1	9.0600		



GENERAL
ELECTRIC
COMPANY



Thu Feb 15 22:03:19 2001

tgov1

22076 BORDER 69.0 1

r	0.5400
t1	1.0000
vmax	1.0000
vmin	0.0000
t2	0.0000
t3	0.5000
dt	0.0000

TIT
2001 RFB Interconnection Study
Trip EL CAJON unit
2001 Heavy Summer Case
Study for DG Power Generation Project

RUN

*** Fault bus at El Cajon**
FB 0.0 "EL CAJON" 69.

*** Clear fault bus at EL CAJON**
CFB 4.0 "EL CAJON" 69.

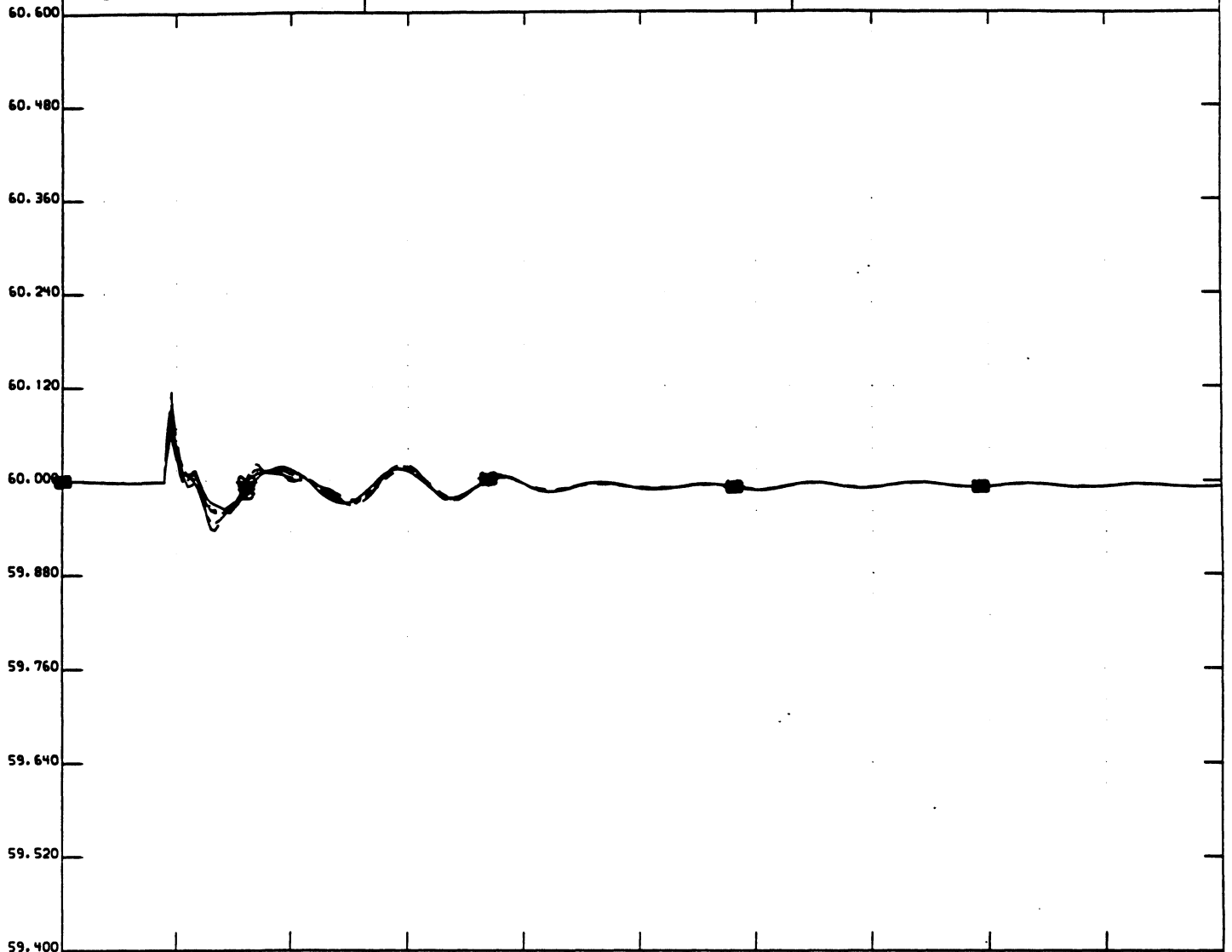
*** Trip EL CAJON gen**
TG 4.0 "EL CAJON" 69. "*"**



GENERAL
ELECTRIC
COMPANY

G-1:ELCAJON
Fri Feb 16 15:48:12 2001

outage_rfb1.chf
C:\WorkFiles\cb2000\workfile\Gen Stu



0.01667		Time, sec.					11.0000
59.400	_____	O	fbus	22232 ENCINA	230.00	1	60.600
59.400	_____	+	fbug	22256 ESCENDIDO	69.00	1	60.600
59.400	-----	*	fbus	22464 MIGUEL	230.00	1	60.600
59.400	-----	#	fbug	22496 MISSION	69.00	1	60.600
59.400	_____	X	fbus	22768 SOUTHBAY	69.00	1	60.600
59.400	-----	\$	fbus	22772 SOUTHBAY	138.00	1	60.600

2001 Heavy Summer Base Case, Max. gen at South Bay
SDG&E Load & Losses = 4256 MW, Imp. = -2650 MW, CFE Imp = 0 MW
Base Case, ALIS, no area peaking, EOR = 4323 MW, SCIT = 11497 MW
Originated from WSCC 00hs3f
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi vsch for svd buses. adi taps hdt



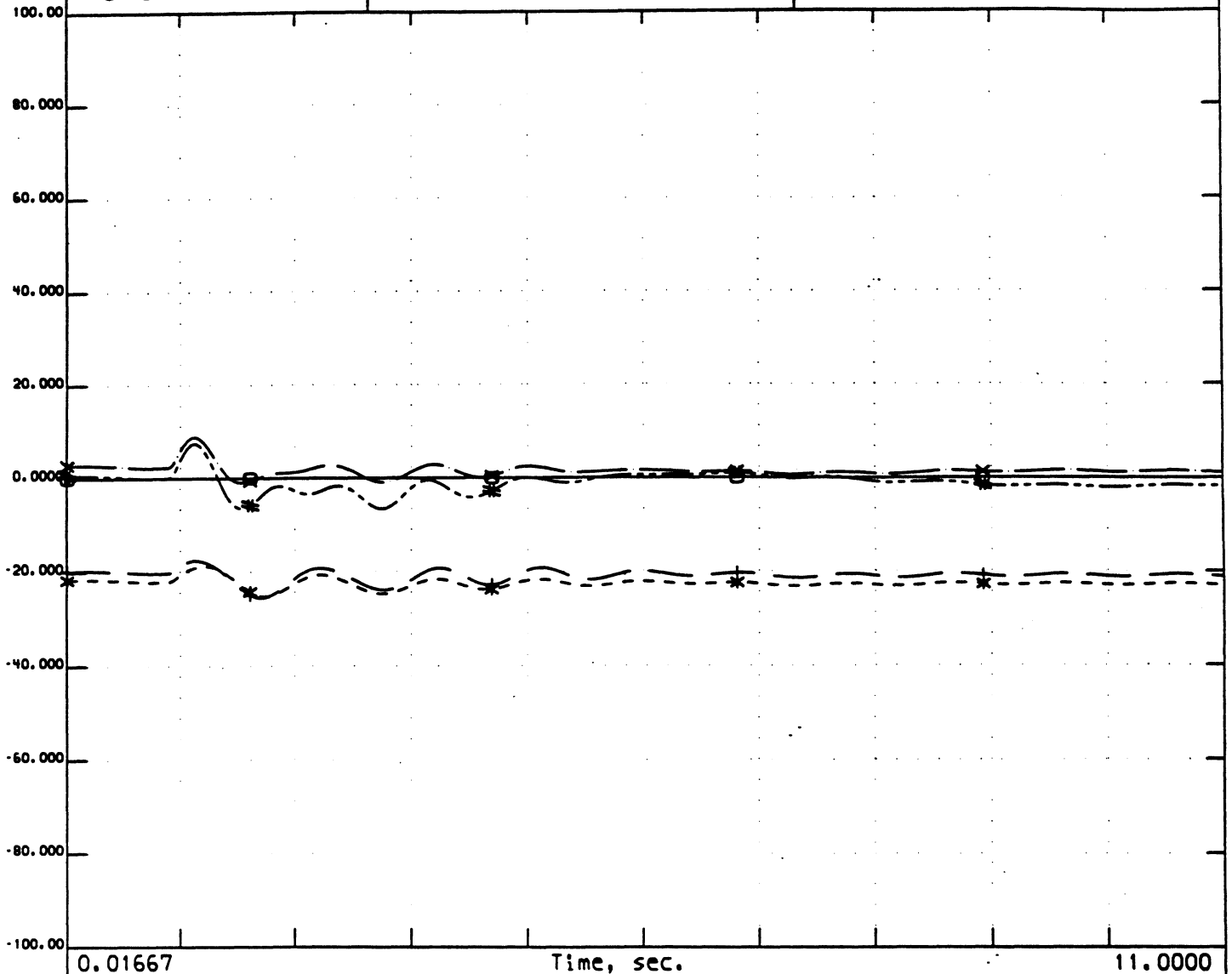
GENERAL
ELECTRIC
COMPANY

G-1:EL

Thu Feb 15 21:46:49 2001

outage_rfb1.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



-100.0	_____	O	ang	30000 PTSB 7	20.00	1	100.00
-100.0	_____	+	ang	22240 ENCINA 4	22.00	1	100.00
-100.0	-----	*	ang	22244 ENCINA 5	24.00	1	100.00
-100.0	-.-.-.-.-	#	ang	22780 SOUTHBY1	15.00	1	100.00
-100.0	-----	X	ang	22792 SOUTHBY4	20.00	1	100.00

2001 Heavy Summer Base Case, Max. gen at South Bay
SDG&E Load & Losses = 4256 MW, imp. = -2650 MW, CFE Imp. = 0 MW
Base Case, ALIS, no area peaking, EOR = 4323 MW, SCIT = 11497 MW
Originated from WSEC 00hs3f
Built by SDG&E Transmission Planning Section, 12/02/00

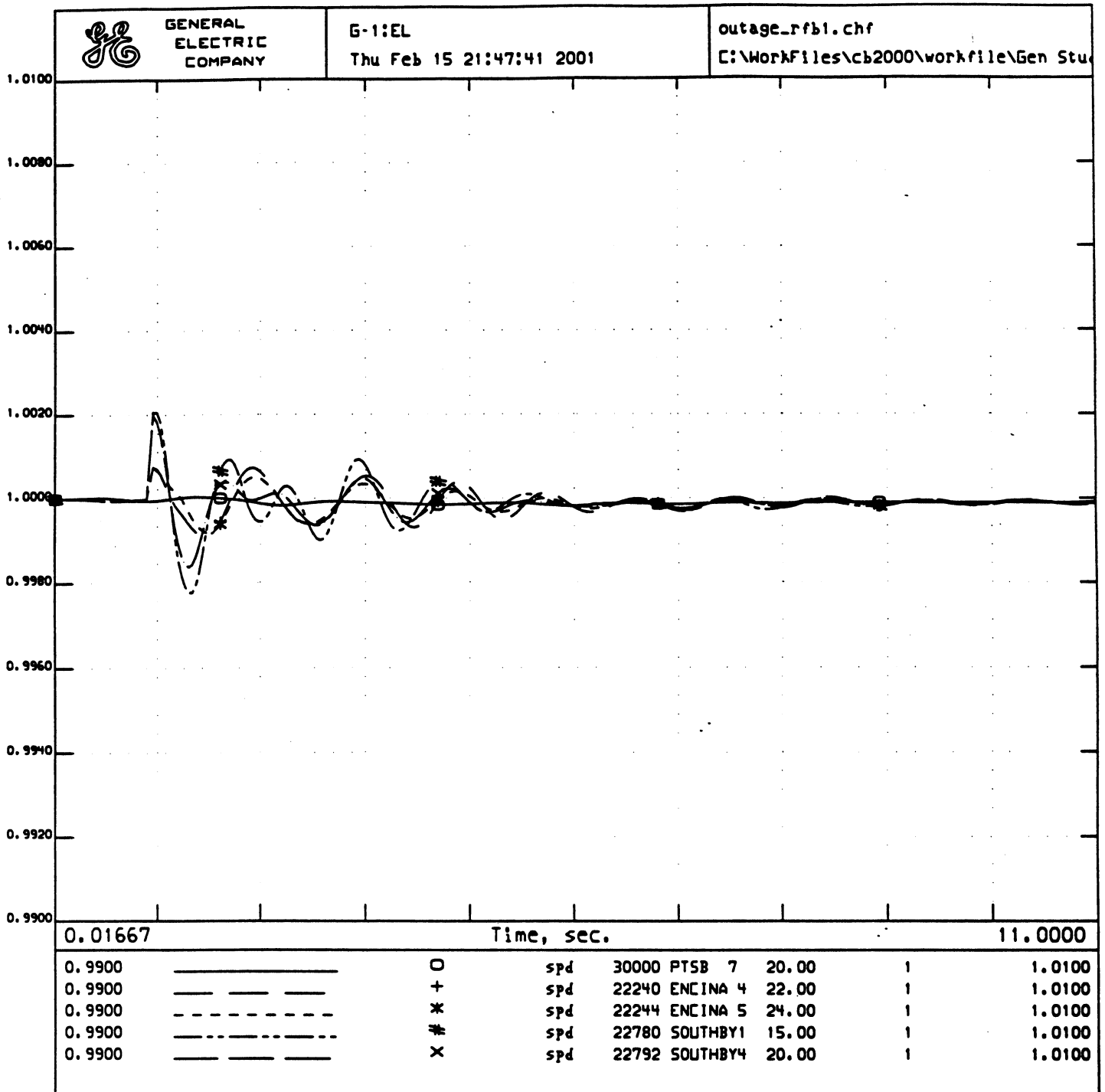
1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



2001 Heavy Summer Base Case, Max. gen at South Bay
 SDG&E Load & Losses = 4256 MW, Imp. = -2650 MW, CFE Imp = 0 MW
 Base Case, ALIS, no area peaking, EOR = 4323 MW, SCIT = 11497 MW
 Originated from WSEC 00hs3f
 Built by SDG&E Transmission Planning Section, 12/02/00

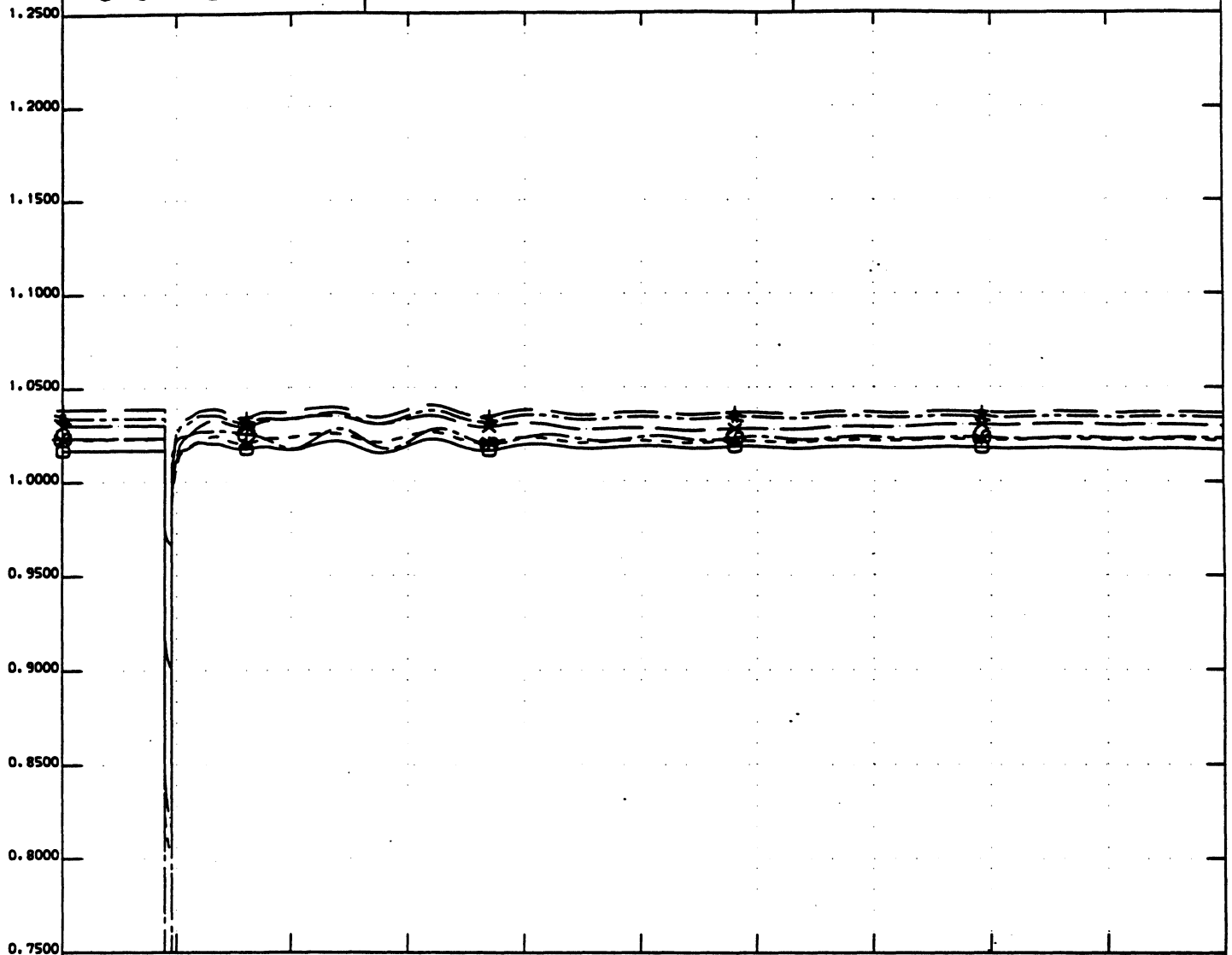
1/28: changed sycamore qf to carlton hills qf
 2/7: changed shunts to svd's per svd.epc file
 2/8: rev'd hdt
 2/8: rev'd load forecast
 2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



GENERAL
ELECTRIC
COMPANY

G-1:EL
Thu Feb 15 21:48:12 2001

outage_rfb1.chf
C:\WorkFiles\cb2000\workfile\Gen Stu



0.01667		Time, sec.				11.0000	
0.7500	_____	O	vbug	22256 ESCNDIDO	69.00	1	1.2500
0.7500	_____	+	vbul	22408 LOSCOCHS	69.00	1	1.2500
0.7500	_____	*	vbus	22420 MAIN ST	69.00	1	1.2500
0.7500	_____	#	vbug	22496 MISSION	69.00	1	1.2500
0.7500	_____	x	vbus	22768 SOUTHBAY	69.00	1	1.2500
0.7500	_____	@	vbul	22860 TRABUCO	138.00	1	1.2500

2001 Heavy Summer Base Case, Max. gen at South Bay
SDG&E Load & Losses = 4256 MW, Imp. = -2650 MW, CFE Imp = 0 MW
Base Case, ALIS, no area peaking, EOR = 4323 MW, SCIT = 11497 MW
Originated from WSEC 00hs3f
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

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2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vs ch for svd buses. adi taps hdt

TIT
2001 RFB Interconnection Study
Trip Border unit
2001 Heavy Summer Case
Study for DG Power Generation Project

RUN

*** Fault bus at BORDER**
FB 0.0 "BORDER " 69.

*** Clear fault bus at BORDER**
CFB 4.0 "BORDER " 69.

*** Trip BORDER gen**
TG 4.0 "BORDER " 69. "*"**



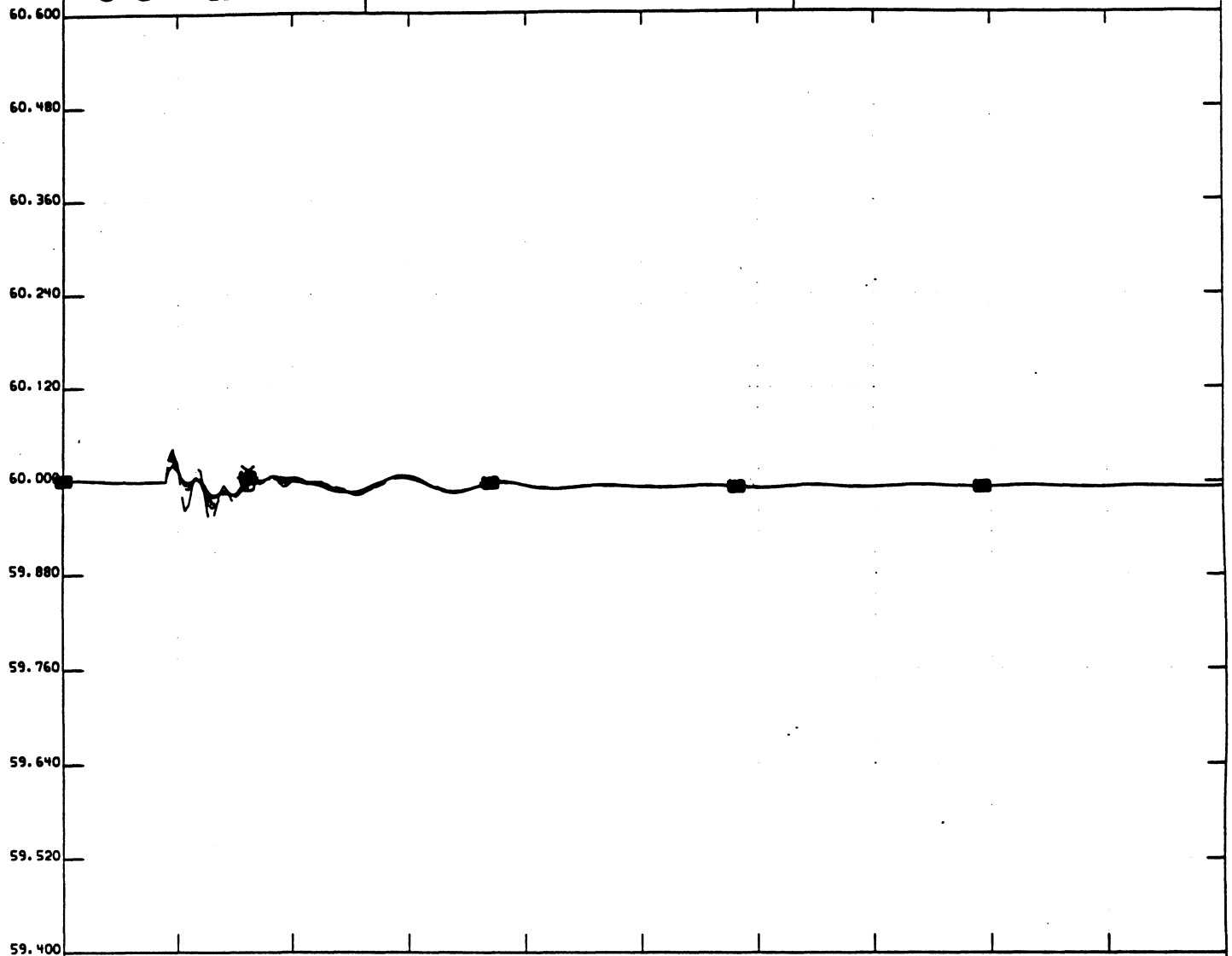
GENERAL
ELECTRIC
COMPANY

G-1: BORDER

Thu Feb 15 21:35:22 2001

outage_rfb.chf

C:\WorkFiles\cb2000\workfile\Gen Stud



0.01667		Time, sec.						11.0000
59.400	_____	O	fbus	22232 ENCINA	230.00	1		60.600
59.400	_____	+	fbug	22256 ESCENDIDO	69.00	1		60.600
59.400	-----	*	fbus	22464 MIGUEL	230.00	1		60.600
59.400	-----	#	fbug	22496 MISSION	69.00	1		60.600
59.400	_____	X	fbus	22768 SOUTHBAY	69.00	1		60.600
59.400	-----	69	fbus	22772 SOUTHBAY	138.00	1		60.600

2001 RFB Interconnection Study
Trip Border unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

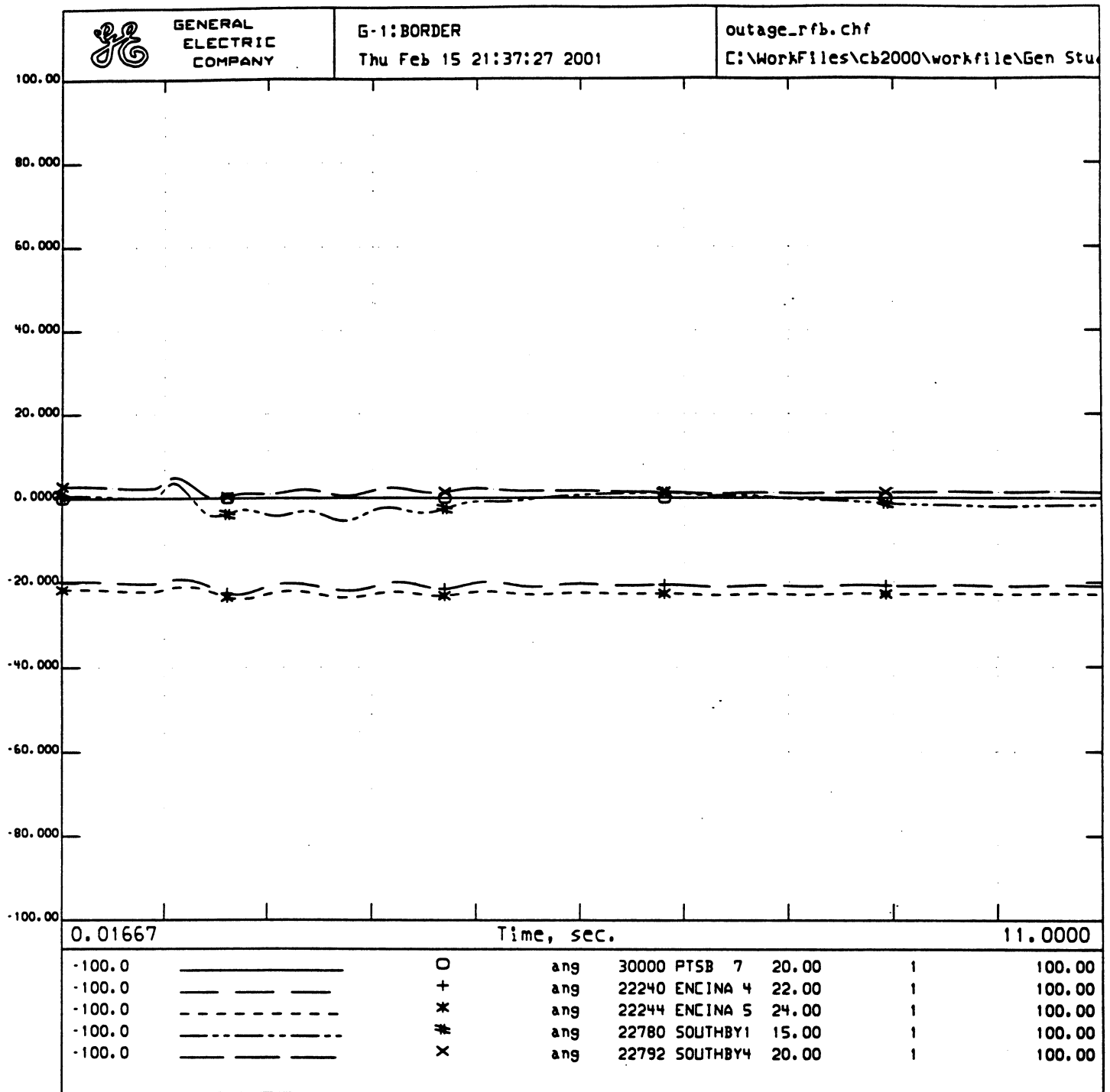
1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



2001 RFB Interconnection Study
 Trip Border unit
 2001 Heavy Summer Case
 Study for DG Power Generation Project
 Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



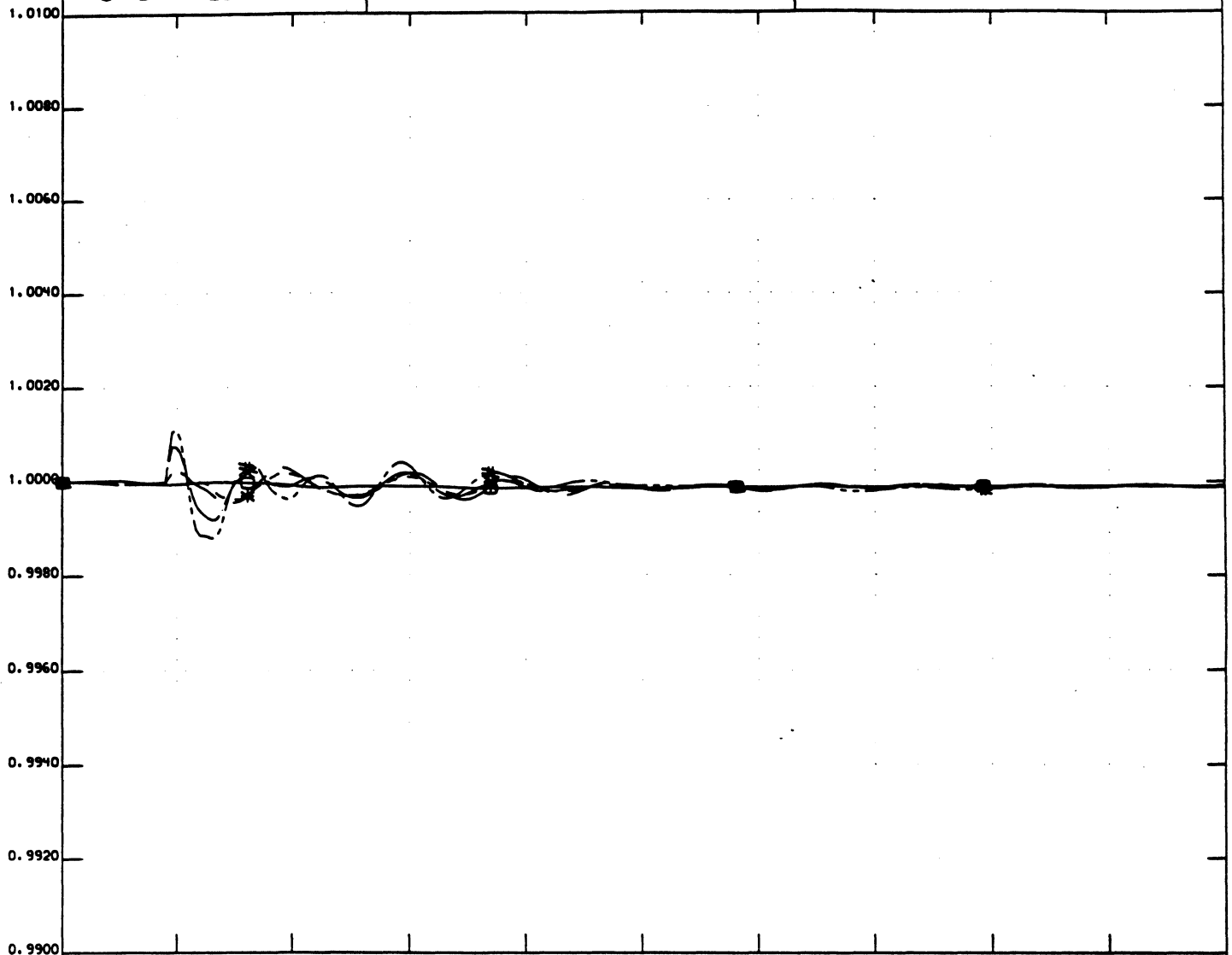
GENERAL
ELECTRIC
COMPANY

G-1: BORDER

Thu Feb 15 21:39:25 2001

outage_rfb.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



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0.9900	_____	+	spd	22240	ENCINA 4	22.00	1	1.0100
0.9900	-----	*	spd	22244	ENCINA 5	24.00	1	1.0100
0.9900	-----	#	spd	22780	SOUTHB Y1	15.00	1	1.0100
0.9900	_____	X	spd	22792	SOUTHB Y4	20.00	1	1.0100

2001 RFB Interconnection Study
Trip Border unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



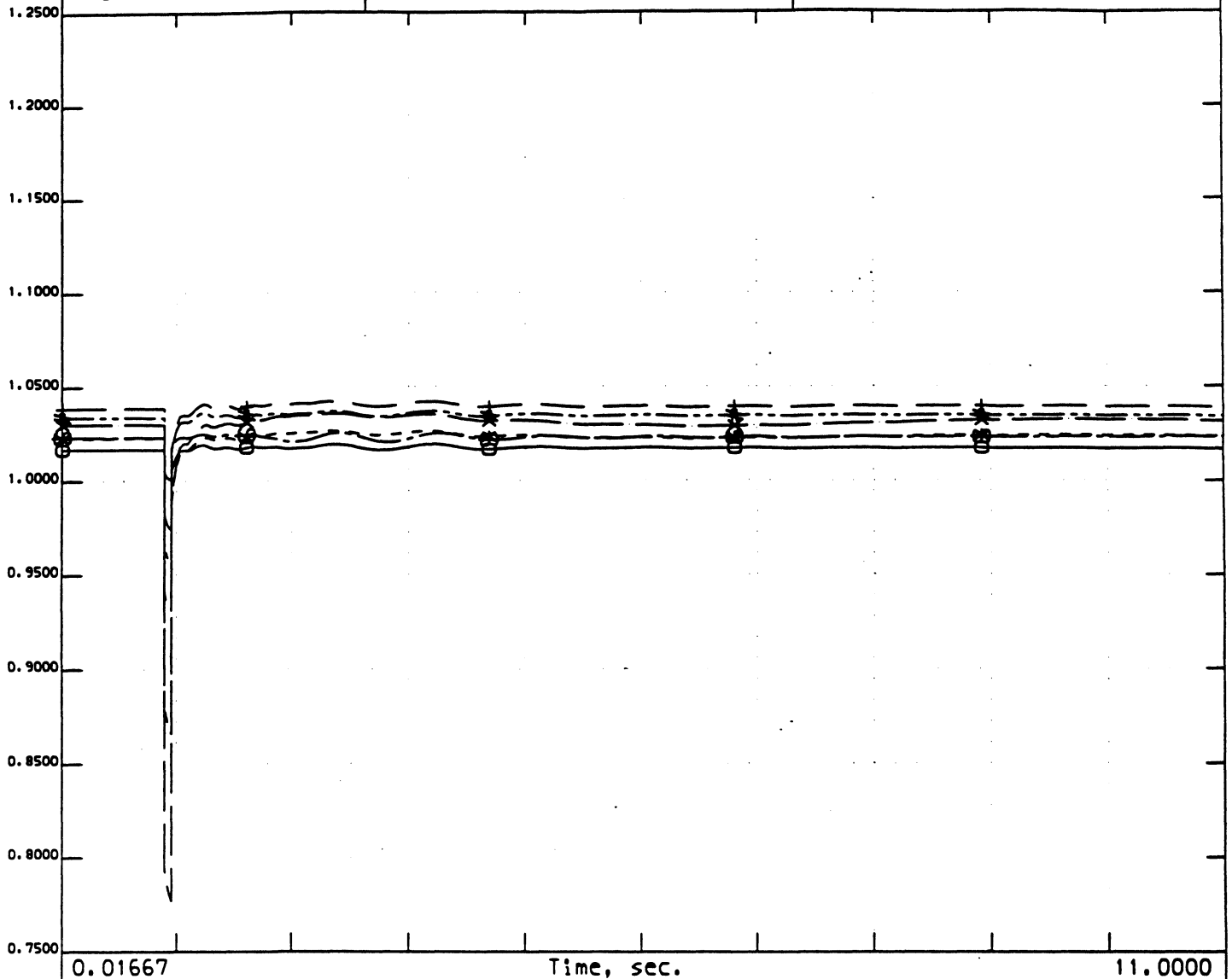
GENERAL
ELECTRIC
COMPANY

G-1: BORDER

Fri Feb 16 15:44:59 2001

outage_rfb.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



0.7500	_____	O	vbug	22256 ESCENDIDO	69.00	1	1.2500
0.7500	_____	+	vbul	22408 LOSCOCHS	69.00	1	1.2500
0.7500	-----	*	vbus	22420 MAIN ST	69.00	1	1.2500
0.7500	-----	#	vbug	22496 MISSION	69.00	1	1.2500
0.7500	_____	x	vbus	22768 SOUTHBAY	69.00	1	1.2500
0.7500	-----	69	vbul	22860 TRABUCO	138.00	1	1.2500

2001 RFB Interconnection Study
Trip Border unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt

01max_sy.sav
00HS_RFB.dyd
TIT
2001 RFB Interconnection Study
Trip MISSION unit
2001 Heavy Summer Case
Study for DG Power Generation Project

RUN

*** Fault bus at Mission**
FB 0.0 "MISSION " 69.

*** Clear fault bus at EL CAJON**
CFB 4.0 "MISSION " 69.

*** Trip EL CAJON gen**
TG 4.0 "MISSION " 69. "*"**



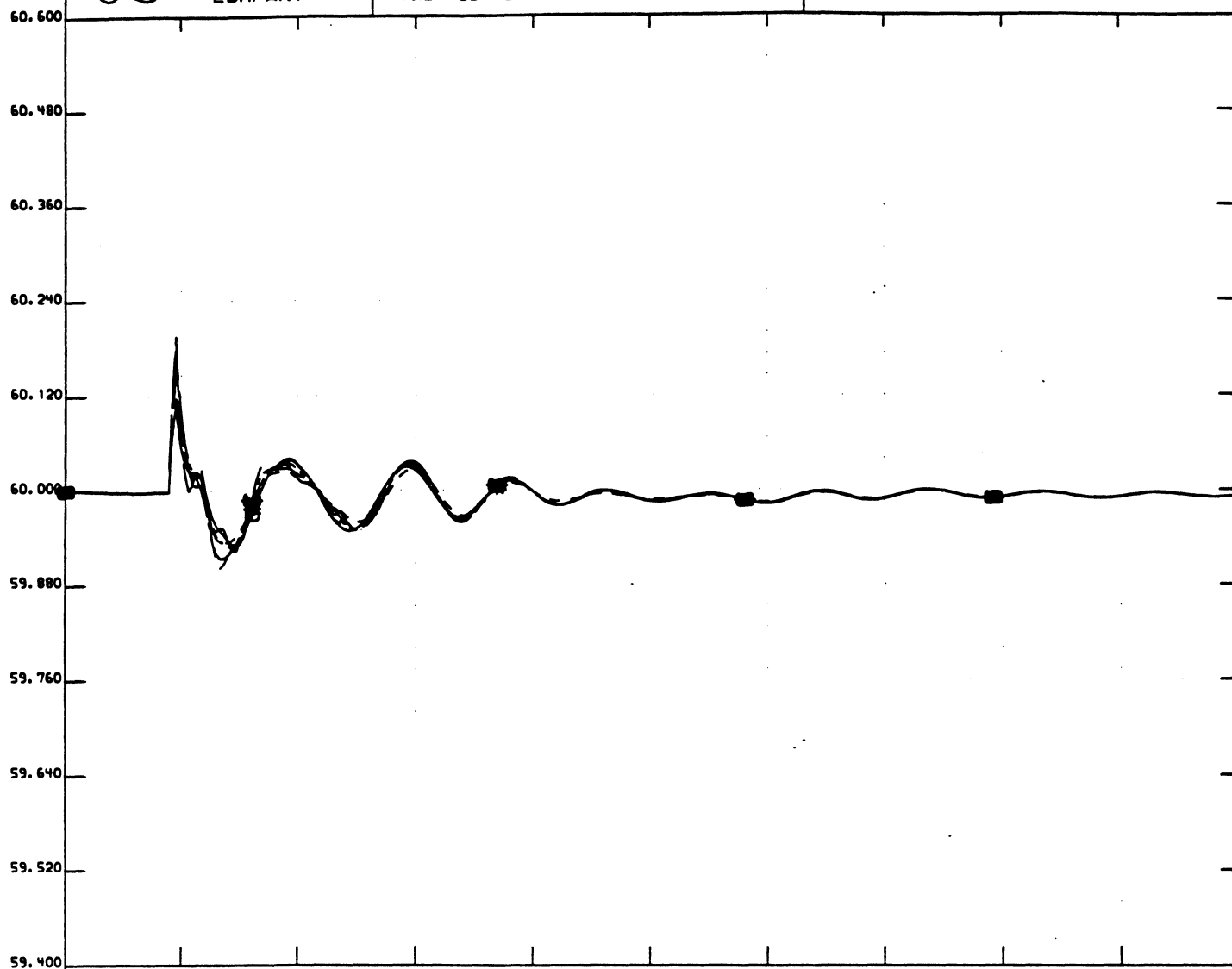
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:56:25 2001

outage_rfb2.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



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59.400	_____	+	fbug	22256 ESCNDIDO	69.00	1	60.600	
59.400	-----	*	fbus	22464 MIGUEL	230.00	1	60.600	
59.400	-----	#	fbug	22496 MISSION	69.00	1	60.600	
59.400	_____	X	fbus	22768 SOUTHBAY	69.00	1	60.600	
59.400	-----	@	fbus	22772 SOUTHBAY	138.00	1	60.600	

2001 RFB Interconnection Study
Trip MISSION unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



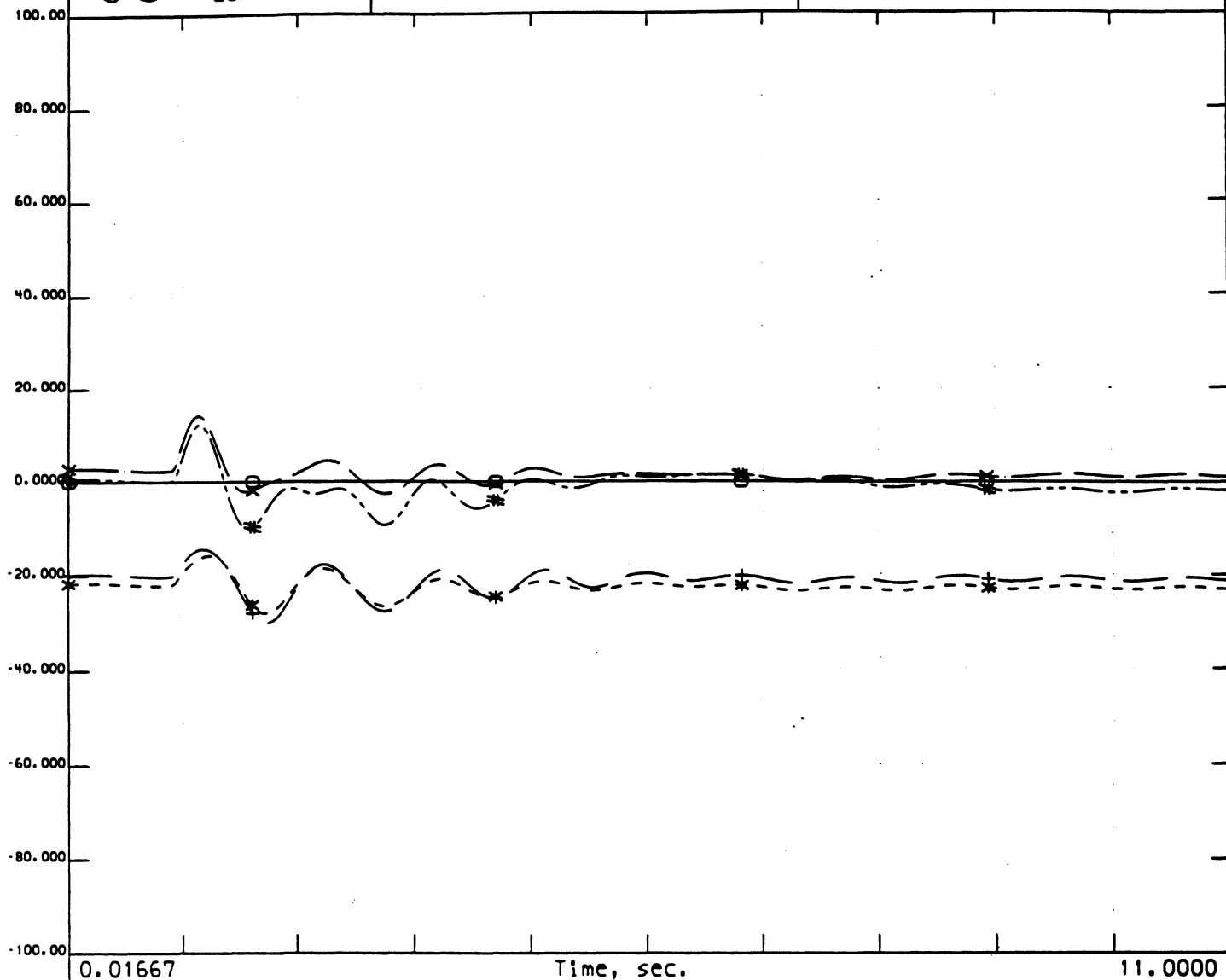
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:56:58 2001

outage_rfb2.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



-100.0	_____	O	ang	30000	PTSB 7	20.00	1	100.00
-100.0	_____	+	ang	22240	ENCINA 4	22.00	1	100.00
-100.0	-----	*	ang	22244	ENCINA 5	24.00	1	100.00
-100.0	-.-.-.-.-	#	ang	22780	SOUTHBV1	15.00	1	100.00
-100.0	-----	X	ang	22792	SOUTHBV4	20.00	1	100.00

2001 RFB Interconnection Study

Trip MISSION unit

2001 Heavy Summer Case

Study for DG Power Generation Project

Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsched for svd buses. adi taps hdt



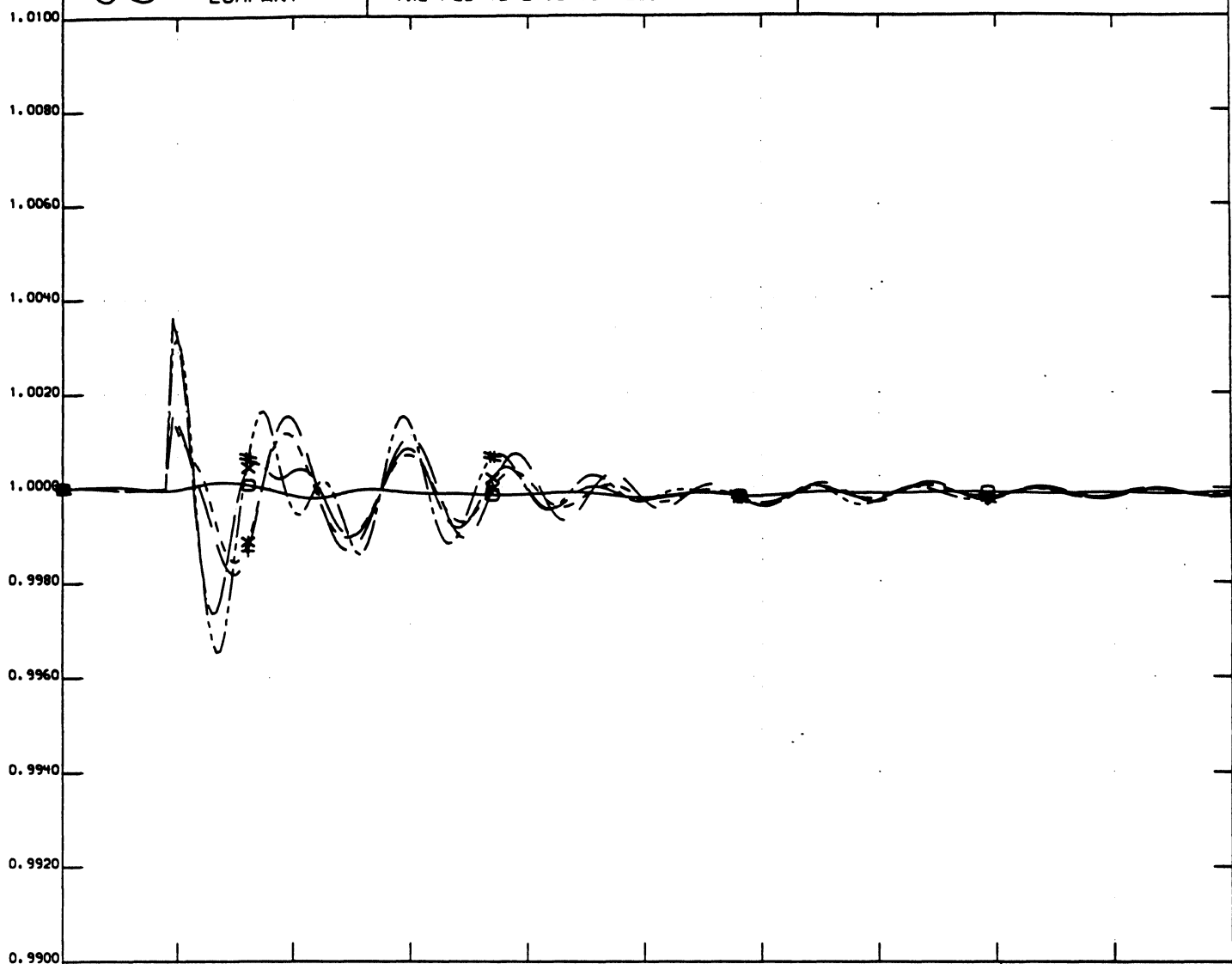
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:57:51 2001

outage_rfb2.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



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0.9900	_____	+	spd	22240 ENCINA 4	22.00	1	1.0100
0.9900	-----	*	spd	22244 ENCINA 5	24.00	1	1.0100
0.9900	-----	#	spd	22780 SOUTHBY1	15.00	1	1.0100
0.9900	_____	x	spd	22792 SOUTHBY4	20.00	1	1.0100

2001 RFB Interconnection Study

Trip MISSION unit

2001 Heavy Summer Case

Study for DG Power Generation Project

Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi VsCh for svd buses. adi taps hdt



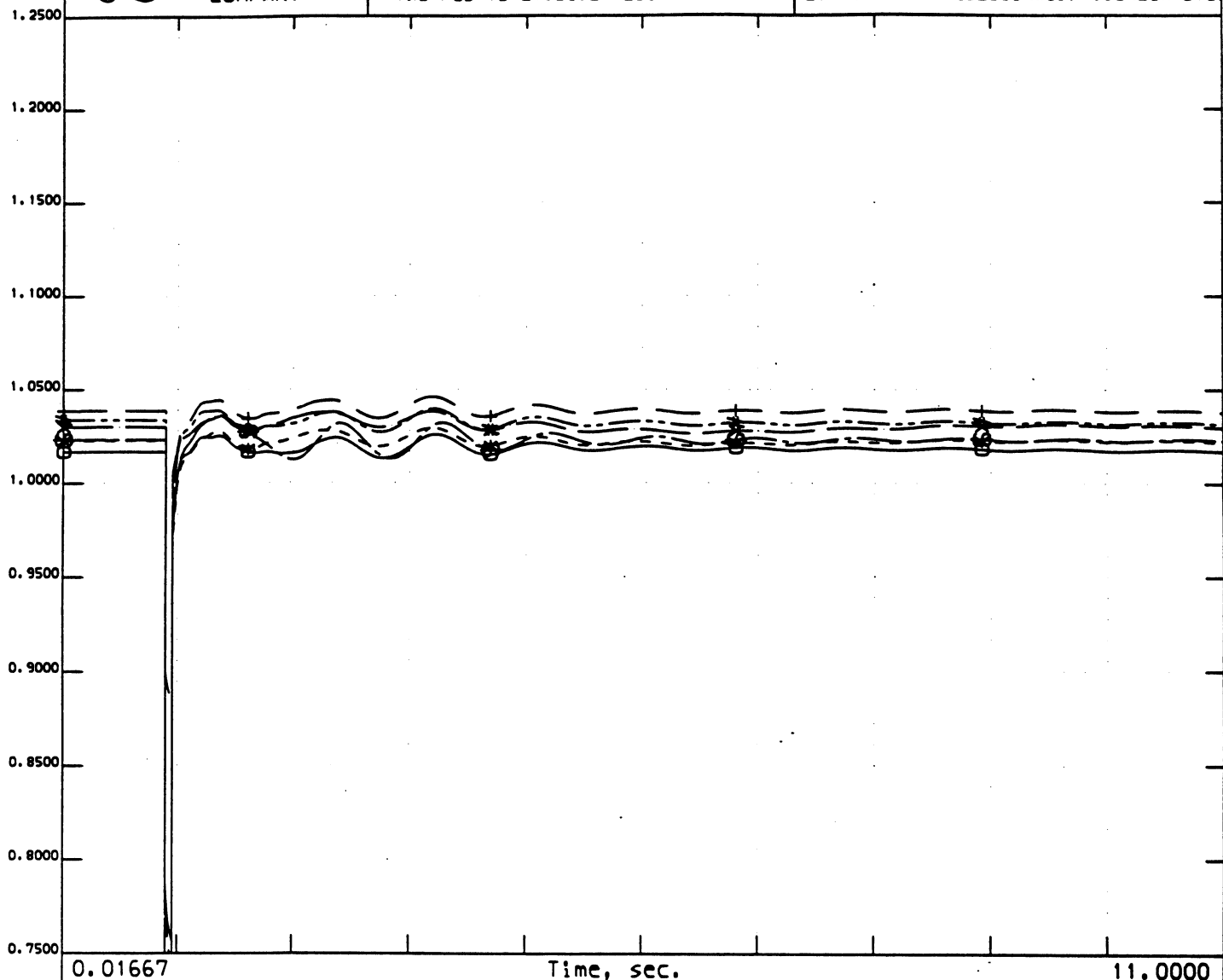
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:58:21 2001

outage_rfb2.chf

C:\WorkFiles\cb2000\workfile\Gen Stud



0.7500		Time, sec.		11.0000	
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0.7500	_____	+	vbul	22408 LOSCOCHS	69.00 1 1.2500
0.7500	- - - - -	*	vbus	22420 MAIN ST	69.00 1 1.2500
0.7500	- - - - -	#	vbug	22496 MISSION	69.00 1 1.2500
0.7500	_____	X	vbus	22768 SOUTHBAY	69.00 1 1.2500
0.7500	- - - - -	\$	vbul	22860 TRABUCO	138.00 1 1.2500

2001 RFB Interconnection Study
Trip MISSION unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt

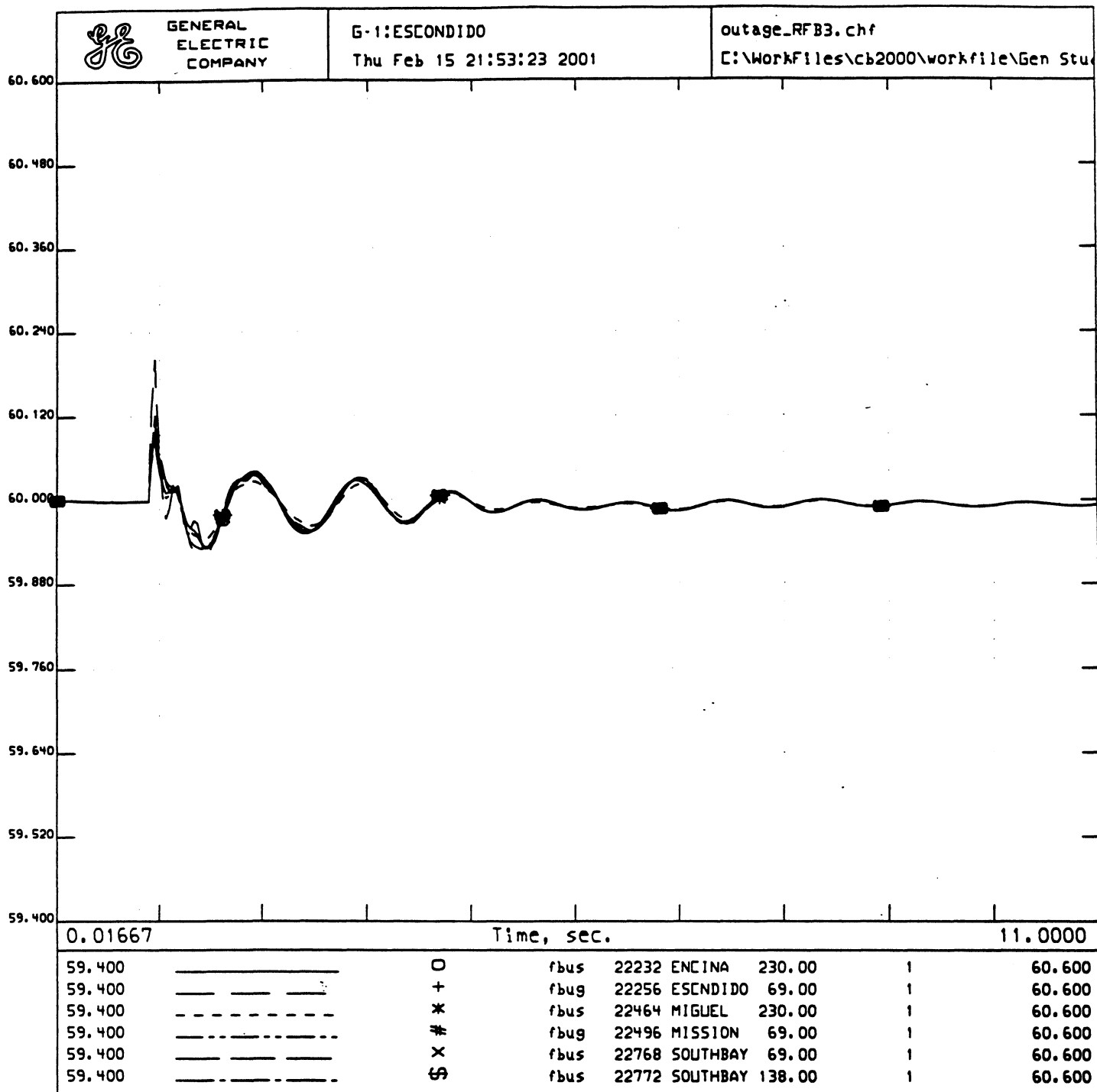
TIT
2001 RFB Interconnection Study
Trip ESCONDIDO unit
2001 Heavy Summer Case
Study for DG Power Generation Project

RUN

*** Fault bus at ESCONDIDO**
FB 0.0 "ESCNDIDO" 69.

*** Clear fault bus at ESCONDIDO**
CFB 4.0 "ESCNDIDO" 69.

*** Trip ESCONDIDO gen**
TG 4.0 "ESCNDIDO" 69. "*"**



2001 RFB Interconnection Study
 Trip ESCONDIDO unit
 2001 Heavy Summer Case
 Study for DG Power Generation Project
 Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



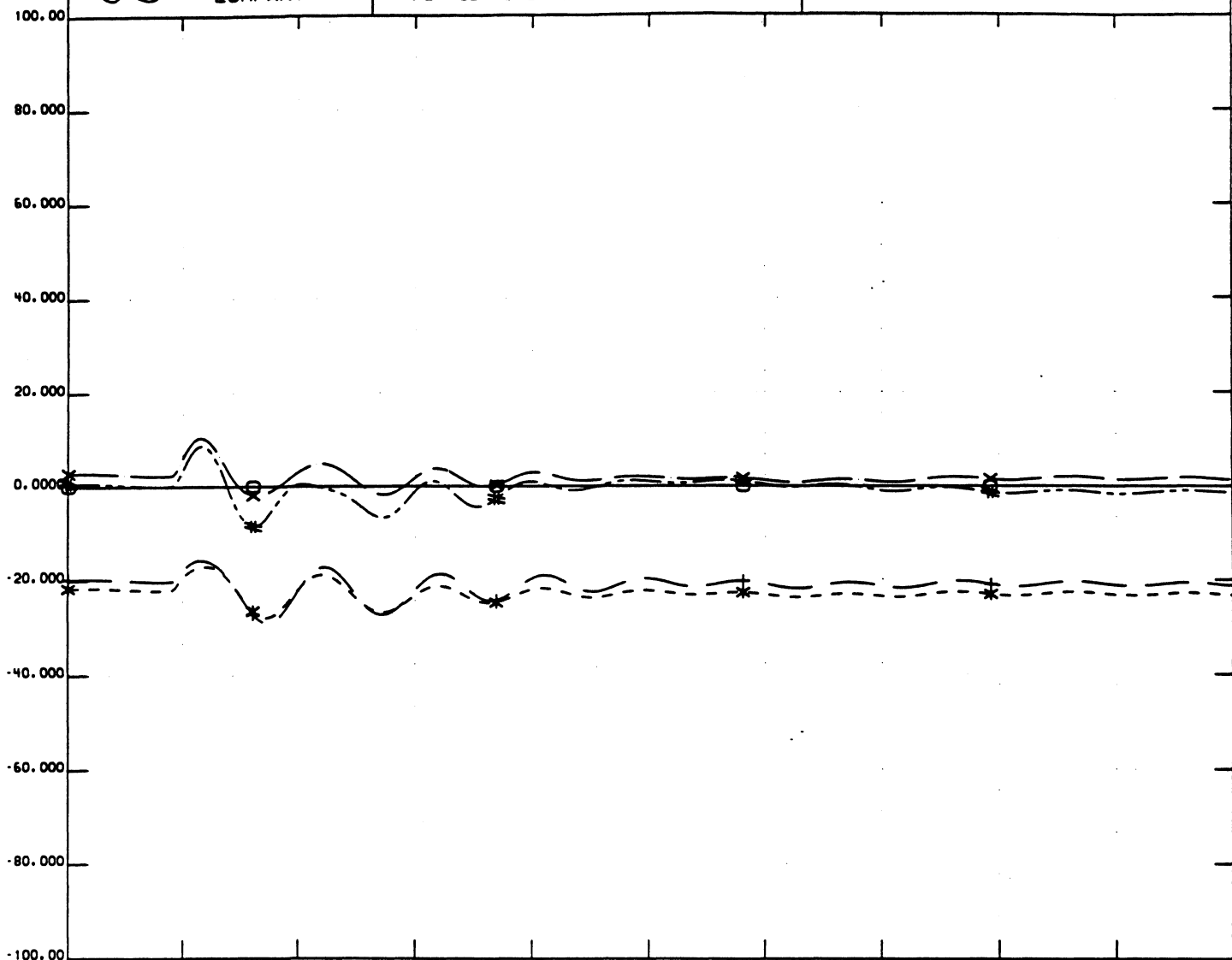
GENERAL
ELECTRIC
COMPANY

G-1:ESCONDIDO

Thu Feb 15 21:53:52 2001

outage_RFB3.chf

C:\WorkFiles\cb2000\workfile\Gen Stu



0.01667		Time, sec.					11.0000	
-100.0	_____	O	ang	30000	PTSB 7	20.00	1	100.00
-100.0	_____	+	ang	22240	ENCINA 4	22.00	1	100.00
-100.0	-----	*	ang	22244	ENCINA 5	24.00	1	100.00
-100.0	-----	#	ang	22780	SOUTHBY1	15.00	1	100.00
-100.0	_____	X	ang	22792	SOUTHBY4	20.00	1	100.00

2001 RFB Interconnection Study
Trip ESCONDIDO unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

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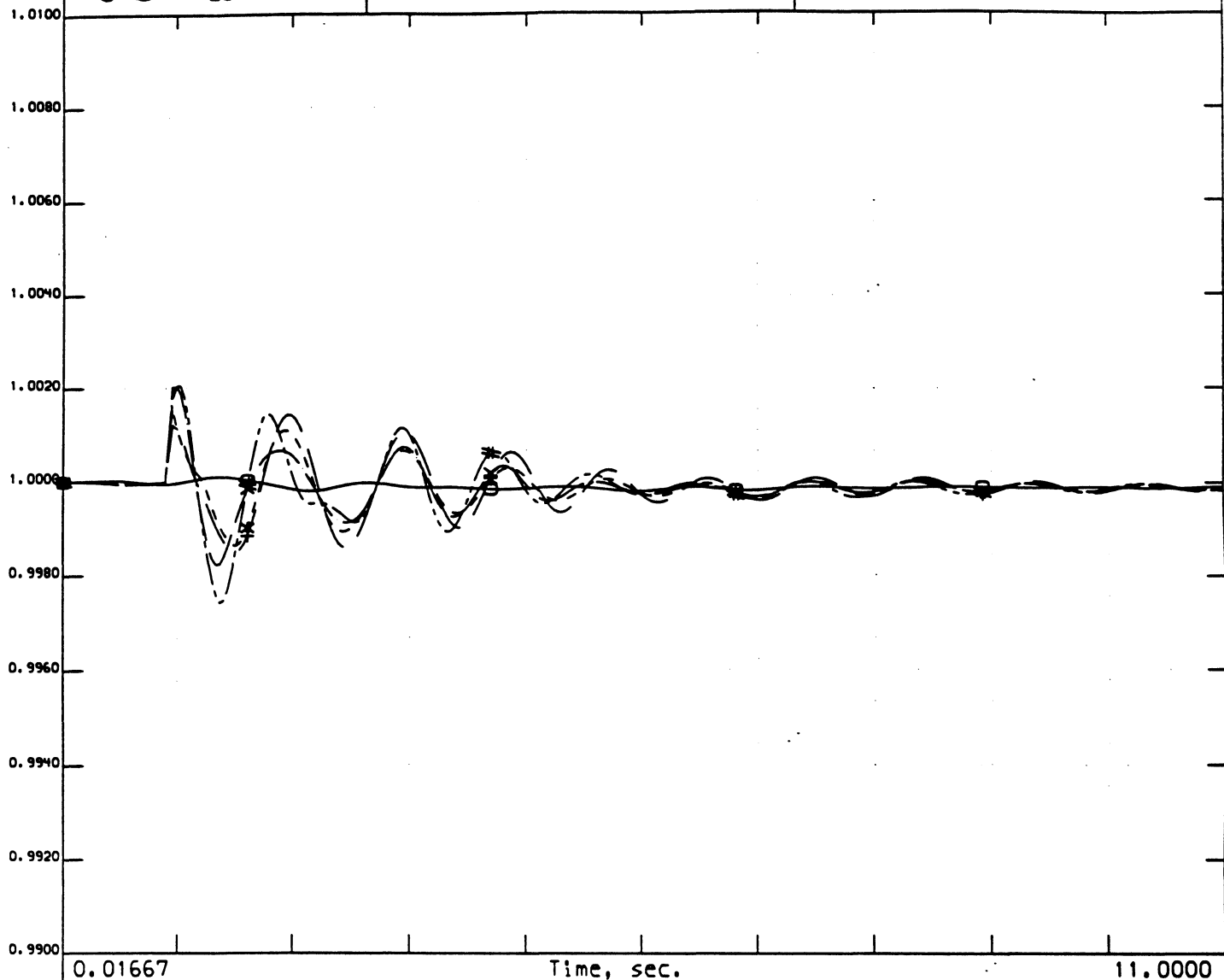
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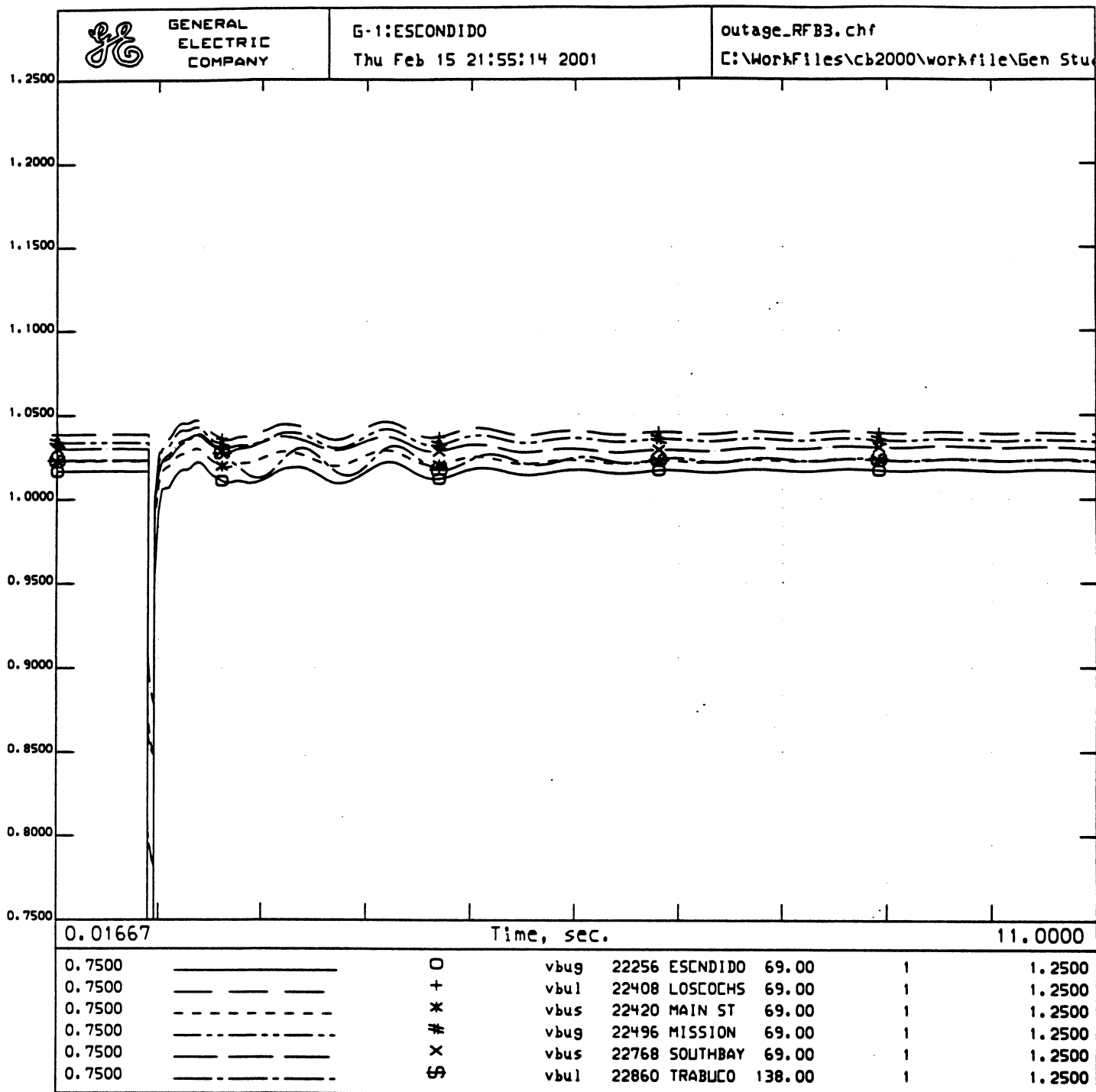
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0.9900	-----	#	spd	22780	SOUTHB	Y1	15.00	1	1.0100
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2001 RFB Interconnection Study
Trip ESCONDIDO unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

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APPENDIX J

Power Flow for El Cajon Plant

Maximum South Bay Generation
All RFB units on line

- 1) N-0 Base Case
- 2) El Cajon-Garfield 69kV
- 3) El Cajon-Jamacha 69kV
- 4) El Cajon-Los Coches 69k
- 5) Los Coches 230/69kV transformer

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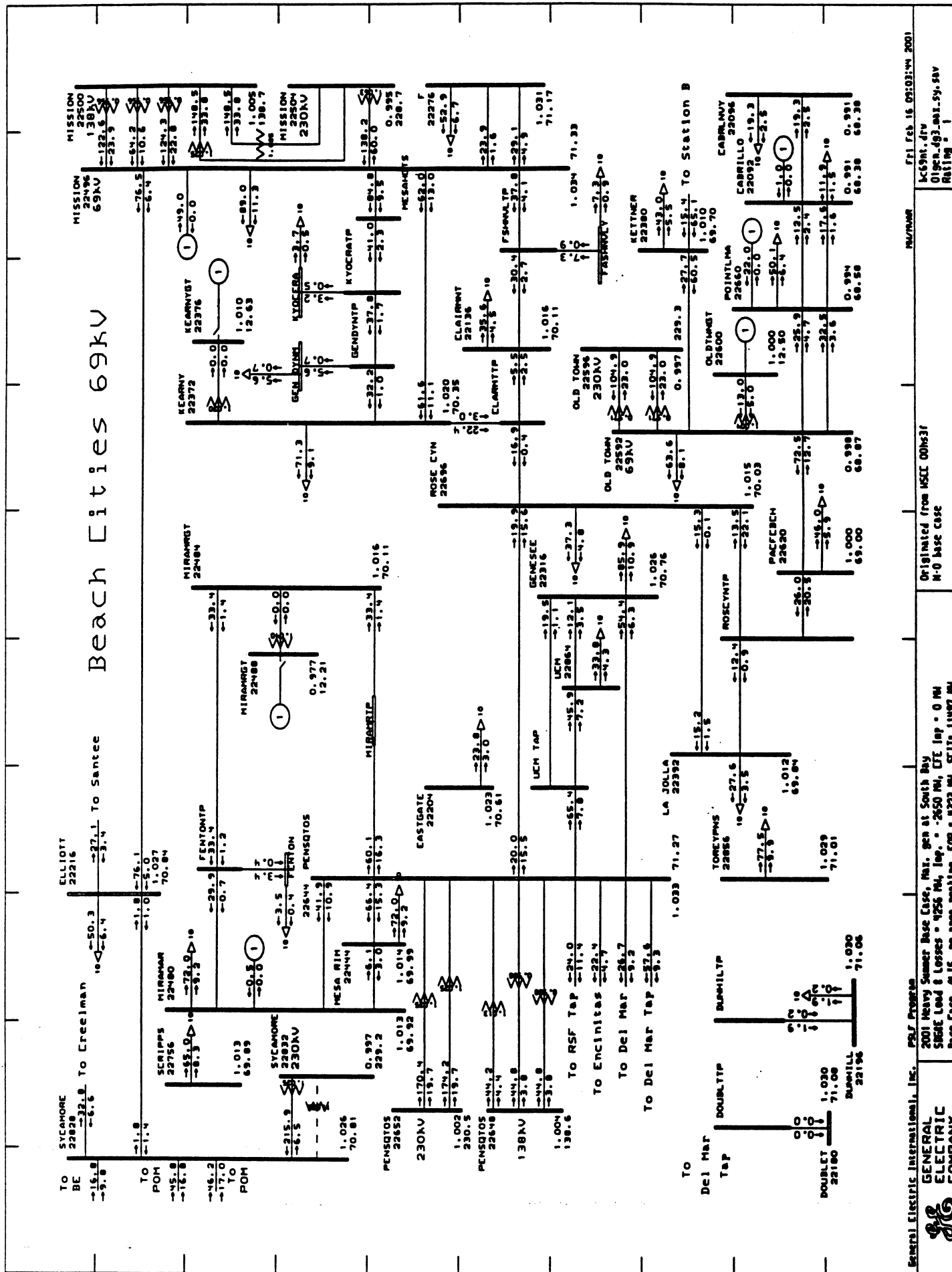
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APPENDIX K

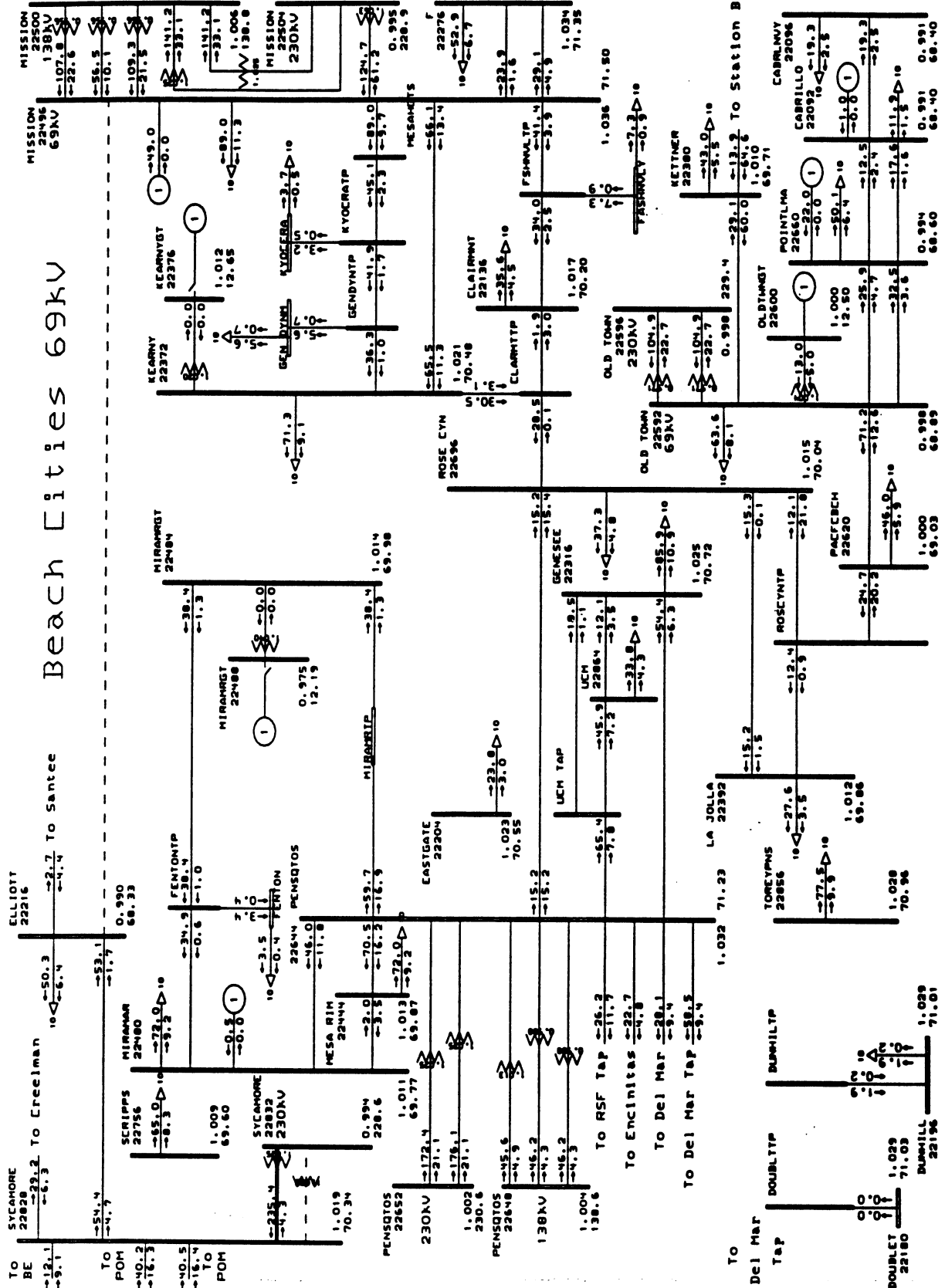
Power Flow for Mission Plant

Maximum South Bay Generation
All RFB units on line

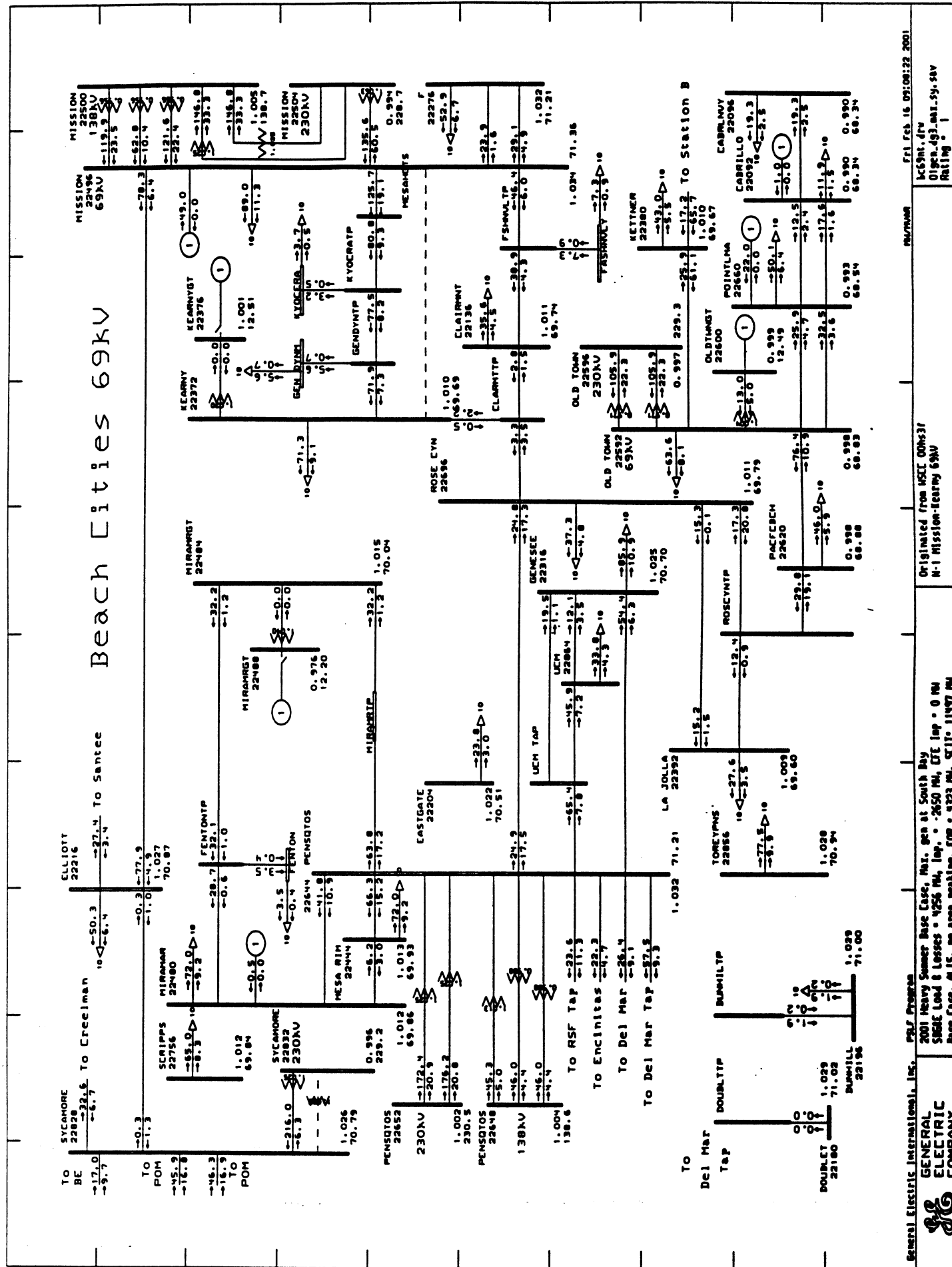
- 1. N-0 Base Case**
- 2. Mission-Elliott 69kV**
- 3. Mission-Mesa Heights 69kV**
- 4. Mission-Kearny 69kV**
- 5. Mission-Fashion Valley-Clairemont 69kV**



Beach Cities 69kV



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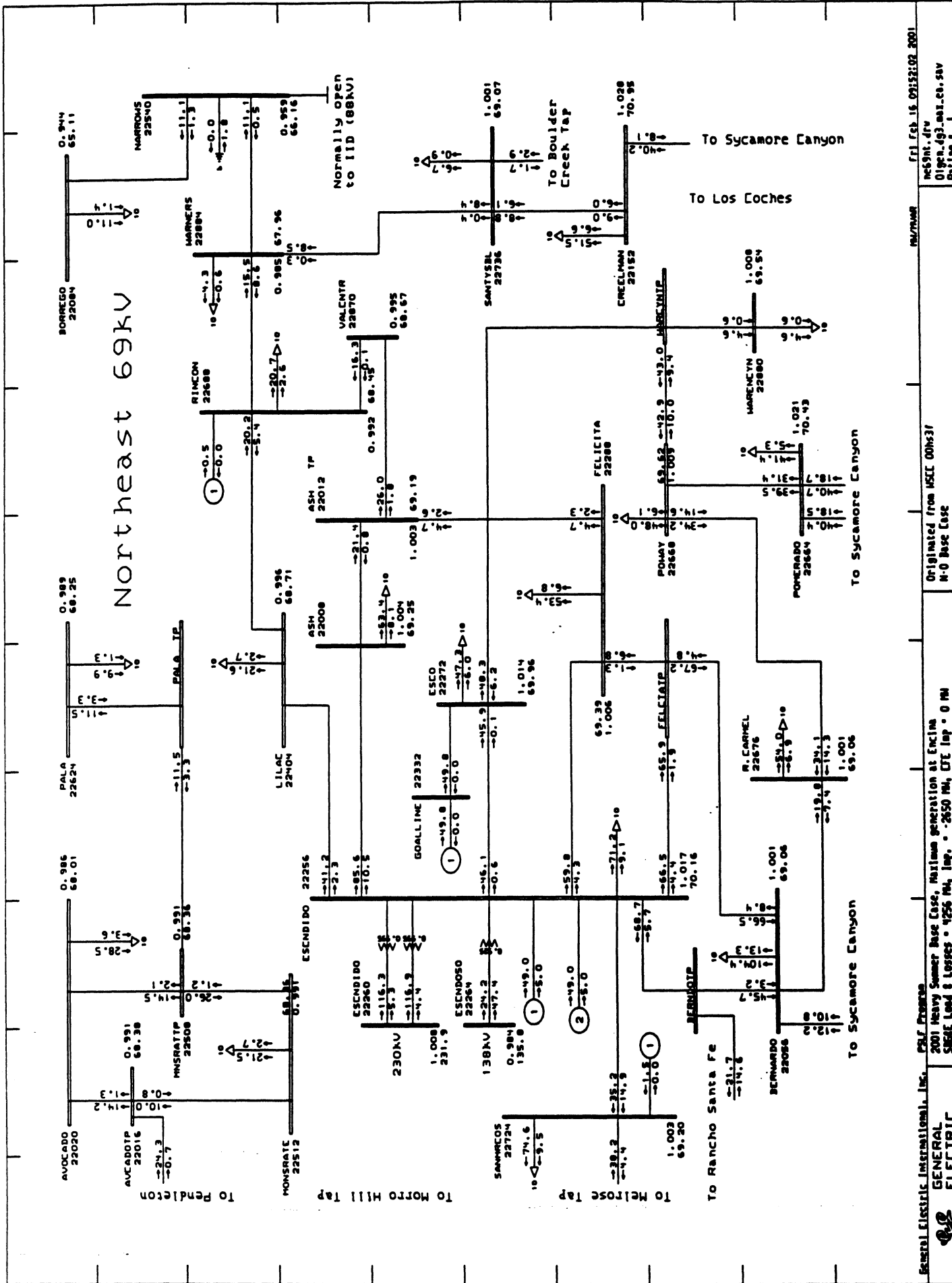
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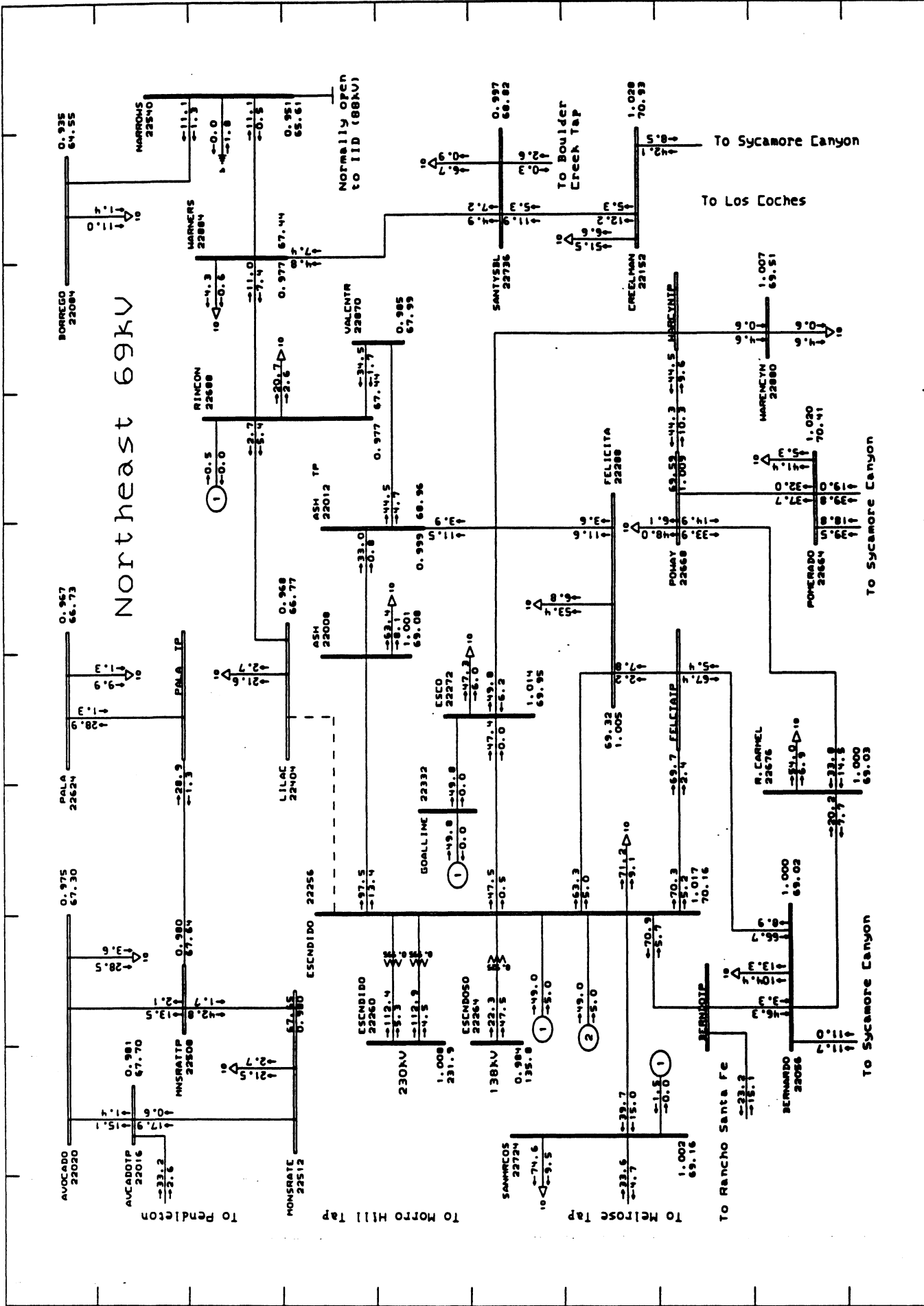
APPENDIX L

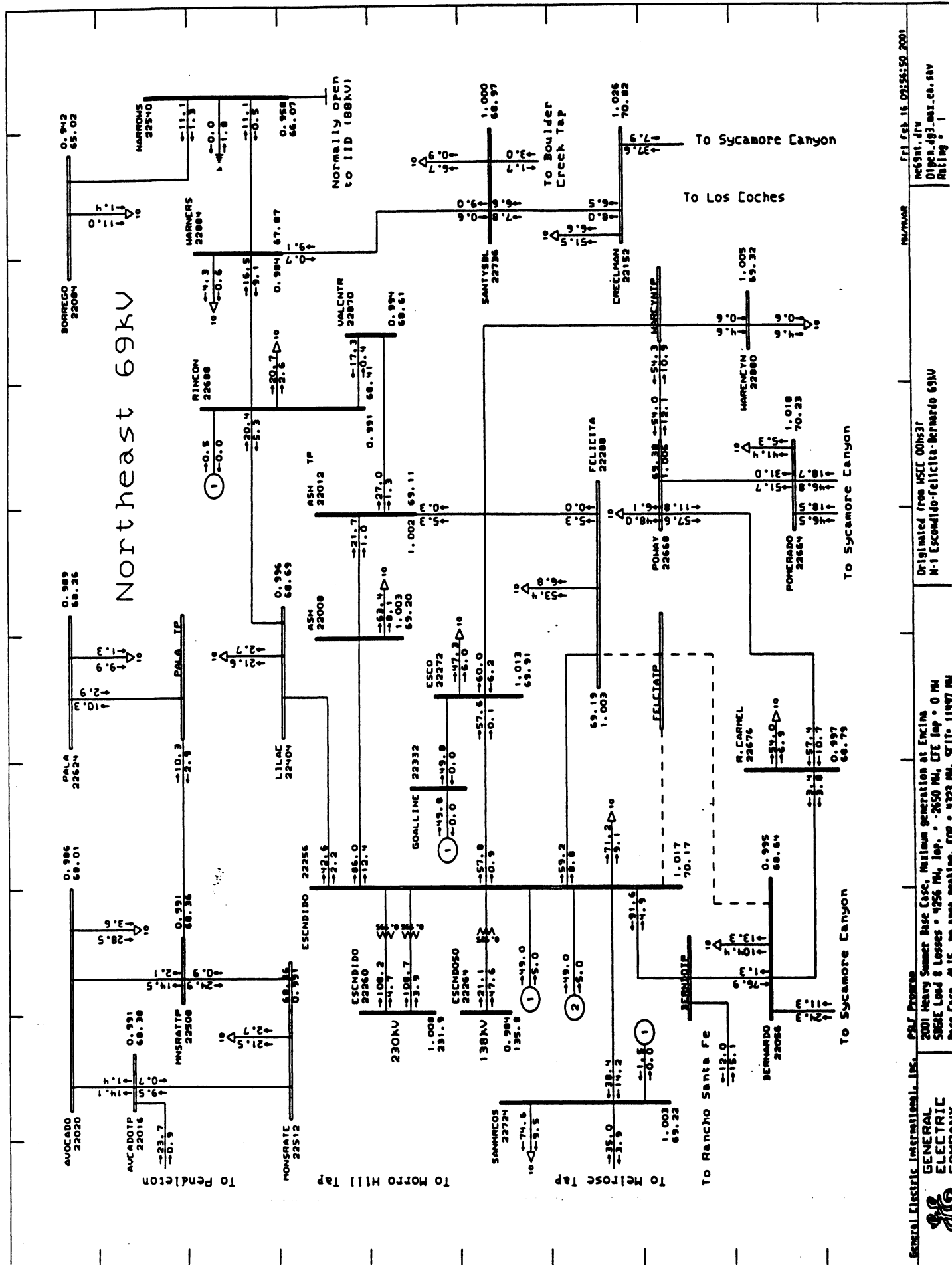
Power Flow for Escondido Plant

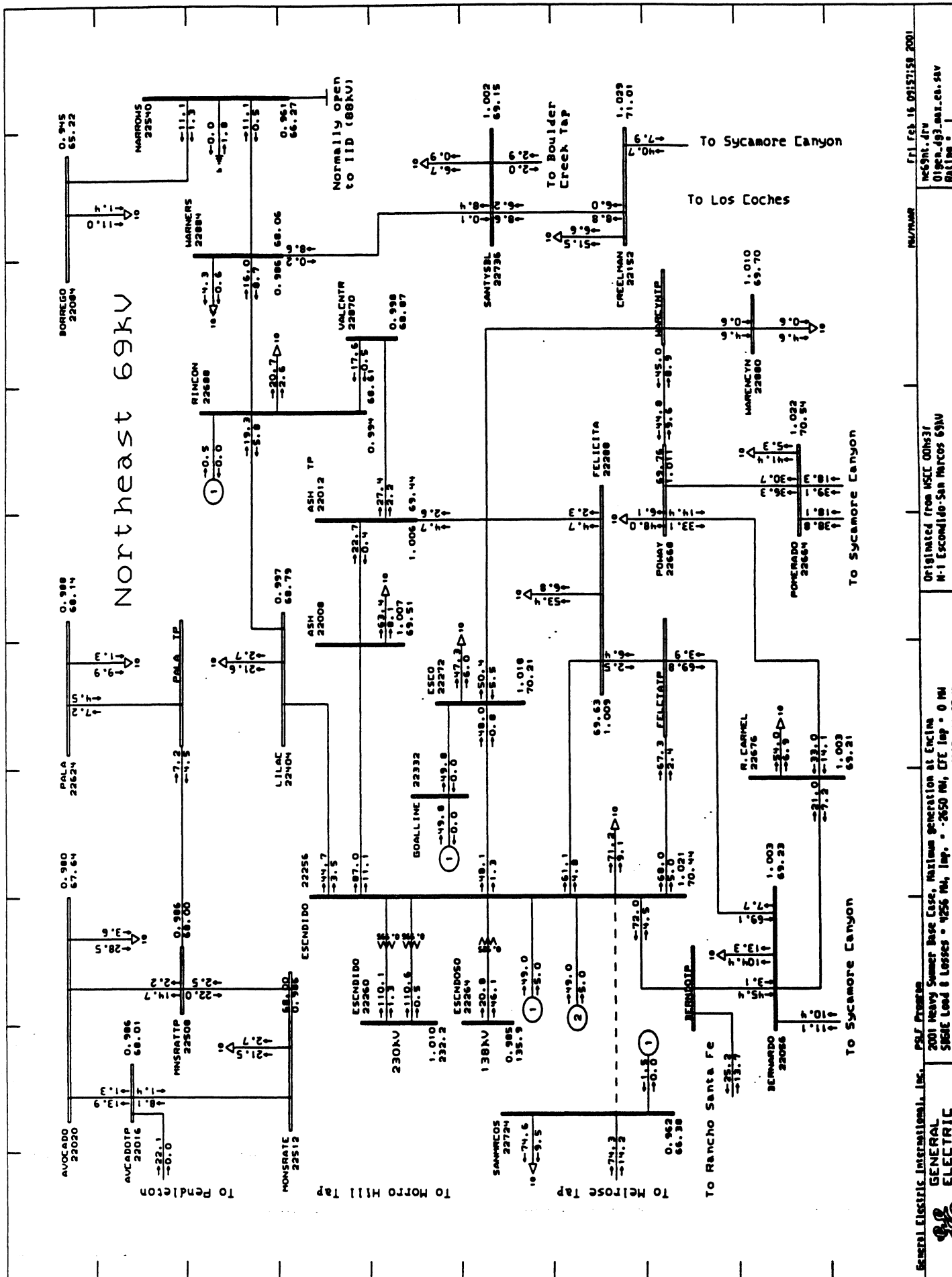
Maximum Encina Generation
All RFB units on line

1. N-0 Base Case
2. N-1 Escondido-Lilac 69kV
3. N-1 Escondido-Ash 69kV
4. N-1 Escondido-Esco 69kV
5. N-1 Escondido-Felicita 69kV
6. N-1 Escondido-Felicita-Bernardo 69kV
7. N-1 Escondido-San Marcos 69kV
8. N-1 Escondido-Bernardo-Rancho Santa Fe 69kV









Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity	Design	Supply	Erection	COMMENTS
TURNKEY ENERGY PROJECT						
DRY LOW NOx, GAS FUEL ONLY						
THE FOLLOWING SCOPE OF SUPPLY REPRESENTS 7 x FT8 TWIN PAC:						
I. GAS TURBINE POWER ISLAND						
1.	GAS TURBINE PACKAGE	14	P	P	I	
-	Gas Generator(GG8-2 Core Engine)					
-	Power Turbine					
-	Diffuser					
-	Collector Box					Vertical Exhaust Configuration
-	Exhaust transition					
-	Fabricated gas turbine base and mount assembly					
-	Coupling connecting power turbine and generator					
-	Hydraulic starting motor					
-	Ignition system					
-	Off-line compressor internal water wash system					
-	Gas turbine heating system					For condensation control
-	Lube oil system					Combined gas generator & power turbine
	• Duplex filters					Scavenge and supply
	• Single oil-to-air cooler					
	• Motor driven pumps					Two ac and one dc
	• Stainless steel piping					
	• Enclosure					PWPS furnishes gas detection and suppression for the gas turbine enclosure. All other enclosures are provided only with gas and thermal detection but not suppression
-	Fuel supply system					
	• Fuel gas strainer					
	• Gas fuel fire valves					
-	Buffered air system					
	• Single air-to-air cooler					
	• Instrumentation for temperature control					
-	Gas turbine enclosure					Prime painted
	• Secondary cooling air system with louvers					
	• Vents and drains					
	• Interior ac/dc lighting					
	• Co2 fire suppression					
	• Sound attenuation to meet 85 dB(A)					At 3 feet (one meter)
	• Gas detection system					

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity	Design	Supply	Erection	COMMENTS
-	Two-stage inlet air filter with weather hood					1st stage prefilter, 2nd stage high-efficiency media.
-	Inlet silencing					One inlet section
-	Exhaust Stack System		E	E	I	PWPS will supply the vertical exhaust interface.
	<ul style="list-style-type: none"> SCR / CO Emissions Control System CEMS Equipment Exhaust Stack & Silencing 					To achieve 5 ppm NOx and 5 ppm CO With ladder/platform access To meet site requirements, including ladders and platforms
2.	HYDRAULIC STARTING PACKAGE	7	P	P	I	Skid mounted with enclosure including fire detection
3.	GENERATOR PACKAGE	7	P	P	I	
-	Brush Open Ventilated Air Cooled Synchronous Generator or equivalent					BDAX 7.290ER, 69.294 MVA, 13.8 kV, 3 phase, 60 Hz, 2 pole, 3600 rpm, 0.85 PF
-	Brushless Exciter Assembly					With pilot exciter
-	Stator Heaters					
-	Neutral ground transformer/resistor					
-	Current transformers					10
-	Stator RTD's					6 with 6 spares
-	Vibration probes					Proximity
-	Bearing drain RTD's					One per bearing
-	Bearing metal RTD's					One per bearing
-	Hot and cold air RTD's					
-	Rotor ground detection					
-	Lube oil System					Air cooled
	<ul style="list-style-type: none"> Duplex filters Motor driven pumps Stainless steel piping downstream of filters 					Two ac and one dc
-	Enclosure					Prime painted
	<ul style="list-style-type: none"> Inlet air filter Inlet and exhaust silencing Interior ac/dc lighting Sound attenuation to 85 dB(A) Fire detection system 					
4.	CONTROL PACKAGE	7	P	P	I	Completely prewired and pretested
-	Prefabricated steel enclosure					
	<ul style="list-style-type: none"> HVAC Fluorescent lighting dc emergency lighting ac power outlets Smoke detector 					

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity	Design	Supply	Erection	COMMENTS
-	Operator control cabinet					Manual and automatic
	• Starting and operating controls					
	• Speed indication					Bus and generator
	• Voltmeters and frequency meters					
	• Ammeter					
	• Wattmeter					
	• VAR meter					
	• Power Factor Meter					
	• Synchroscope and lamps					
-	Monitoring cabinet					
	• CRT and keyboard for operator interface					
	• Printer					
-	Remote I/O System					For DLN Electrical Interface Points
-	ICE Monitor					Includes a remote monitor for each site, interconnecting cables to be provided by owner.
-	Instrument Cabinet					
	• Modular automatic voltage regulator					Auto follower and trip to manual
	• Digital synchronizer					
	• Vibration monitors					Gas turbine and generator
	• Fire protection system power supplies					
	• Static inverter					
-	Unit control cabinet "Engine A"					
	• Control system for automatic starting, running, loading, unloading and shutdown of the unit.					
	• Timer Panel					
	• Expansion chassis					
-	Unit control cabinet " Engine B"					
	• Timer panel					
	• Expansion chassis					
-	Generator protective relay panel					Beckwith
	• Generator protective relays					
	• Lockout relays					
	• Watt hour meter					
-	Motor Control Center					
	• ac and dc distribution panels					
	• Motor starters					
	• Distribution transformer					
	• Breakers as required					
	• Manual transfer switch					Automatic available as an option

Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION					COMMENTS
		Quantity	Design	Supply	Erection	
	<ul style="list-style-type: none"> - Master terminal cabinet <ul style="list-style-type: none"> • Field termination blocks • Power supplies - Ventilated cubicle with rack mounted lead acid batteries - Battery chargers - Switchgear module 15 kV Class <ul style="list-style-type: none"> • Metalclad switchgear compartment • Circuit breaker • Non-segregated insulated 3 phase bus duct • Lightning arresters and surge capacitors • Current transformers and potential transformers • CTG Auxiliary transformer 					24 Vdc and 125 Vdc Mounted in control enclosure 3000 Amp/ 750 MVA, 15kV class Totally enclosed, 15kV class, 3000 Amp
5.	INSTALLATION HARDWARE		P	P	I	
	<ul style="list-style-type: none"> - Interconnecting piping for lube oil, hydraulic start, and water injection - Foundation embedded material - Interconnecting electrical cables 					Between PWPS supplied skids and CTG only Includes all anchor bolts, shims and plates Between PWPS supplied skids and CTG
6.	TRANSFORMERS AND SWITCHYARD		E	E	I	
	<ul style="list-style-type: none"> - Station Auxiliary Transformer - Generator Main Step-Up Transformer - Transmission System 					
7.	STARTUP AND COMMISSIONING SPARE PARTS AND CONSUMABLES		P/E	P/E	P/I	Split between PWPS and I Scope
8.	SET OF STANDARD REMOVAL AND SPECIAL HANDLING TOOLS		P/E	P/E	P/E	One set per site
	<ul style="list-style-type: none"> - Gas Generator Installation & Removal Tools - Power Turbine Installation & Removal Tools - Flexible Coupling Installation & Removal Tools - Borescope and Hot Section Inspection Tools 					
II.	CIVIL WORK, BALANCE OF PLANT SYSTEMS AND CONSTRUCTION RESPONSIBILITIES					
1.	CIVIL WORK		E	E	I	
	<ul style="list-style-type: none"> - Site Survey/Plot Plan 					

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION					COMMENTS
		Quantity	Design	Supply	Erection	
-	Sub-Soil Investigation & Report					Minimum bearing capacity of 2500 psf (120 kPa) and limits differential settlement of the main foundations equal to or less than 0.0005 times the foundation length.
-	Site Leveling					
-	Excavation for Foundations, Pipes, Roads, Cabling & Grounding Grid					
-	Backfill					
-	Finish Grading					
-	Foundations for all Equipment					
-	Surface Drainage to and including any Collection Pond					
-	Oily Water Separator					
-	Sanitary Waste Disposal					
-	Below Grade Electrical Raceway					Includes conduit, duct bank, trenches, etc.
2.	BALANCE OF PLANT SYSTEMS					
-	Service Piping Systems:	E	E		I	
•	Natural Gas Fuel					
•	Instrument Air					
•	Potable Water					
-	BOP Control System	P	P		I	
-	BOP Motor Control Center	E	E		I	
-	Demineralized Water System	E	E		I	Including storage tanks, pumps, and piping
-	Potable Water System	E	E		I	Including storage tanks, pumps and piping
-	Liquid Fuel Storage and unloading system	E	E		I	Including storage tanks, pumps, and piping
-	BOP and Plant Fire Protection Systems- Hydrants Panels and Extinguishers	E	E		I	Including tanks, pumps, and piping
-	Plant Lighting	E	E		I	
-	Intra-communication system	E	E		I	
-	Interior Roads and Parking Areas	E	E		I	
-	Site Fencing and Gates	E	E		I	
3.	ADDITIONAL RESPONSIBILITIES DURING CONSTRUCTION AND START-UP					
-	Plant Engineering		E			
-	Transportation to site		P/E/I			1 Twin Pac to Escondido, Cal 2 Twin Pac to San Diego, Cal 1 Twin Pac to El Cajon, Cal 1 Twin Pac to Mendota, Cal 1 Twin Pac to Vacaville, Cal 1 Twin Pac to Buttonwillow, Cal
-	All labor for Complete off loading, Inventory, Storage, Erection, Installation, Checkout and Start-up of all PWPS supplied equipment and material				I	

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity	Design	Supply	Erection	COMMENTS
-	Provision of Secure Field Office Furnished with Electricity, Heating & Air Conditioning, Drinking Water, Desks, Chairs, Parking area, Lockers & others which are necessary for Field Works, Services & Sanitary Facilities for Office Personnel				I	Including 10' x 40' (3 m x 12 m) area for conex box ; Field office needs to be able to accommodate 6-8 PWPS individuals.
-	Provision of First Aid and Medical Services - OSHA Approved				I	
-	Provisions of Local Communication Facilities				I	Including radio, telephone with international direct dialing and fax machine.
-	Distribution of Electric Power for construction				I	
-	Maintaining and Guarding all Facilities, Equipment, and Materials during construction				I	Including security fence
-	Technical Representatives to advise Customer Supervisory Personnel during FT8 equipment erection checkout, and startup			P/E		
-	Site Organization During Construction					
	• Resident Field Construction Manager			P		
	• Supervision & Manpower for Erection Works, Checkout, Start-up & Commissioning			I		
	• Test Operation & Trial Operation				I	
	• Plant Start-Up Engineering				E	
	• Plant Operators				C	
-	Overall Progress & Construction Schedule; overall Planning, Coordination & Schedule Control				I	
-	Worker's Compensation, Employer's Liability, or any other Local Insurance Required			P/E/I		
-	Adequate Title and Interest, Permanent Facility Permits and Licensing			C		To permit the installation of such units and their operation for at least the period contemplated by the contract. Provide PWPS representatives unrestricted access at all times as may be reasonably necessary in the performance of their duties.
-	Consumable Material for Erection Works: Flushing Oil, Oxygen, Acetylene, Nitrogen, Propane, & Argon Gas with Cylinder for Welding & Annealing, etc.				I	As required
-	First Fill Material, Oils, Greases, Etc. for Testing			P/E/I		

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity Design Supply Erection	COMMENTS
-	Natural Gas for Start-up, Testing and Operation 445 psig (30 bar) (For the DLN Engine this is required to be 500 psig), Approximately 4700 scfm (2.2 m ³ /sec) per gas turbine	C	Per PWPS Natural Gas Fuel Specification FR-2
-	Potable Water for Gas Turbine Water Wash 50 psig (3.4 bar) min., Approximately 300 gallons (1150 liters) per gas turbine water wash at 110 gpm (415 l/m)	C	Per PWPS Potable Water Quality Specification
-	Backfed Electrical Power Supply 225 kW per gas turbine, 13.8kV, 60 Hz, 3 phase for lighting, heating and intermittent auxiliaries	C	Plus as required for BOP loads
-	Finish and Touch up Paint and Painting for all Equipment	I	Primer touch up paint provided by PWPS.
-	Instruction Manuals and Plant Documentation	P/E	5 copies per site
-	Operation and Maintenance Training	P/E	Includes 20 Man-days to train customer personnel. Travel and lodging for customer's personnel not included.
-	Construction Equipment, Tools and Aids including but not limited to the following: Cement Mixers, Loaders, Trucks, Cranes of varying capacities, Power Generators, Air Compressors, Welders, Drilling Equipment, Pipe Working Facilities & all hand tools required for expeditiously and competently completing all phases of the work under the contract.	I	
-	Required Tests Prior to Startup: <ul style="list-style-type: none"> Resistance ratio and polarity tests Field check and calibration All high voltage dielectric tests Pressure testing 	I	Generator and Transformer CTs and PTs All PWPS supplied protective relays and circuits All field installed piping systems
-	Performance Testing	P	
-	Emission and Acoustic Testing	E	
-	Phasing and Synchronizing the Generator to Purchaser's system	E	
-	Builder's All Risk Insurance (BAR)	I	
-	Construction Permits	I	
-	Construction Power	I	480 V, 3 phase, 24 hours per day to electric generator upon arrival of the generator. Temporary 480 V, 350 Amps power at the control house for checkout and start-up.
-	Construction Water	I	
-	Fire Protection	I	
-	Access Road (s)	I	All-weather and unobstructed

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Scope of Supply and Purchaser's Responsibilities

ITEM	DESCRIPTION	Quantity	Design	Supply	Erection	COMMENTS
	<ul style="list-style-type: none"> - Temporary Construction Staging Area - Site Security 			I		
III.	WARRANTY			P/E		12 months from initial synchronization or 18 months from delivery, whichever comes first
IV.	OPTIONS					
1.	Gas Compressors w/ Substation and Switchgear	E	E	I		2 x 50% Gas Compressor per Site for Boost from 150 psig minimum pressure. The DLN engine must have oil and condensate free gas to prevent flash backs at a design pressure of 500 psig.
2.	Adequate Title and Interest, Permanent Facility Permits and Licensing			E		To permit the installation of such units and their operation for at least the period contemplated by the contract. Provide PWPS representatives unrestricted access at all times as may be reasonably necessary in the performance of their duties.
3.	Inlet Fogging or Evap. Cooling.	P	P	I		
4.	Fire Protection – Generator & Control Room	P	P	I		This includes installation of CO2 fire suppression in the Generator Enclosure and FM-200 in the Control House. The existing detection will be used.
5.	Transportable/Modular Configuration	P	P	I		Conversion of the Last 2 FT8 DLN Twin Pacs to the Transportable Configuration w/ electric-hydraulic start systems.



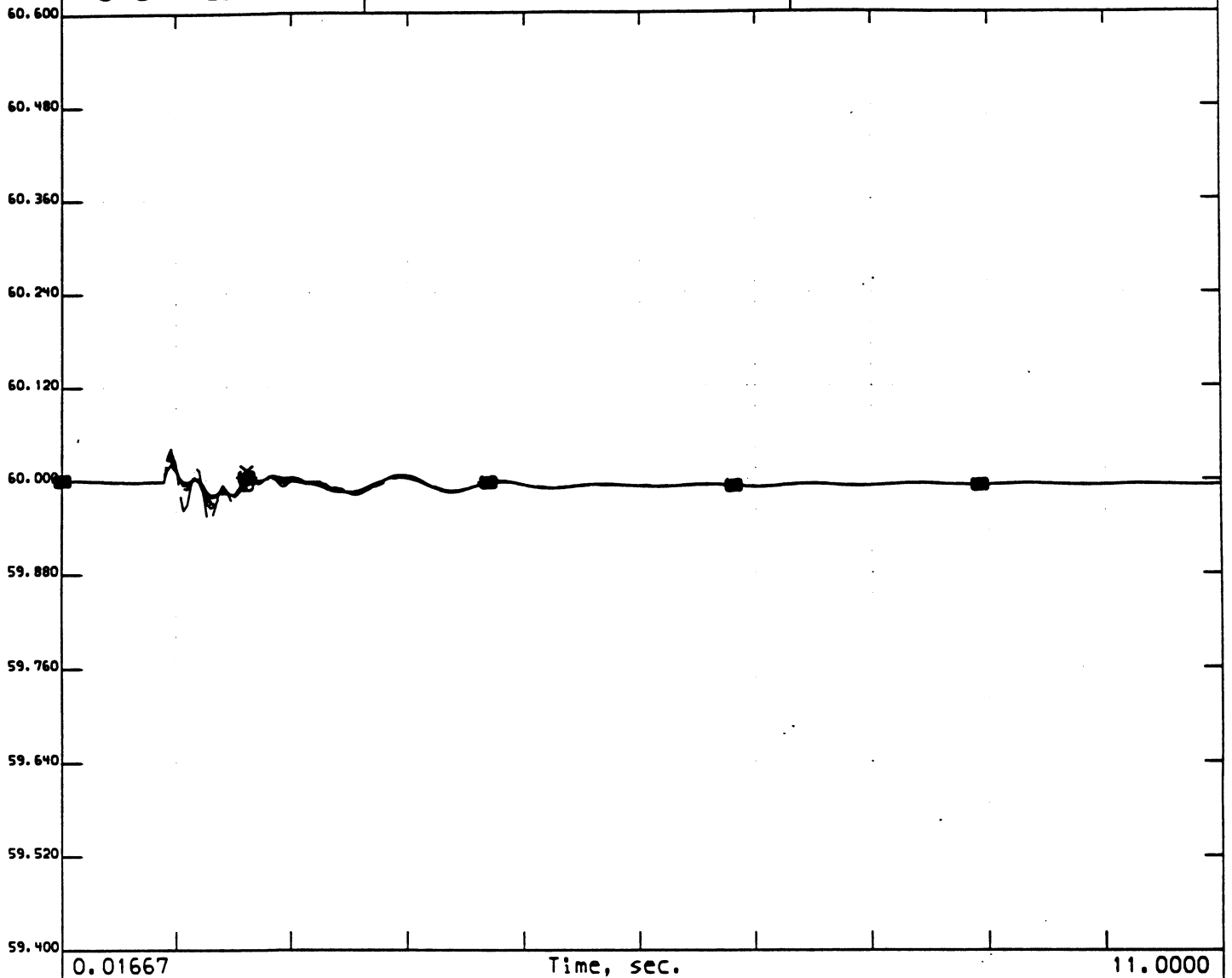
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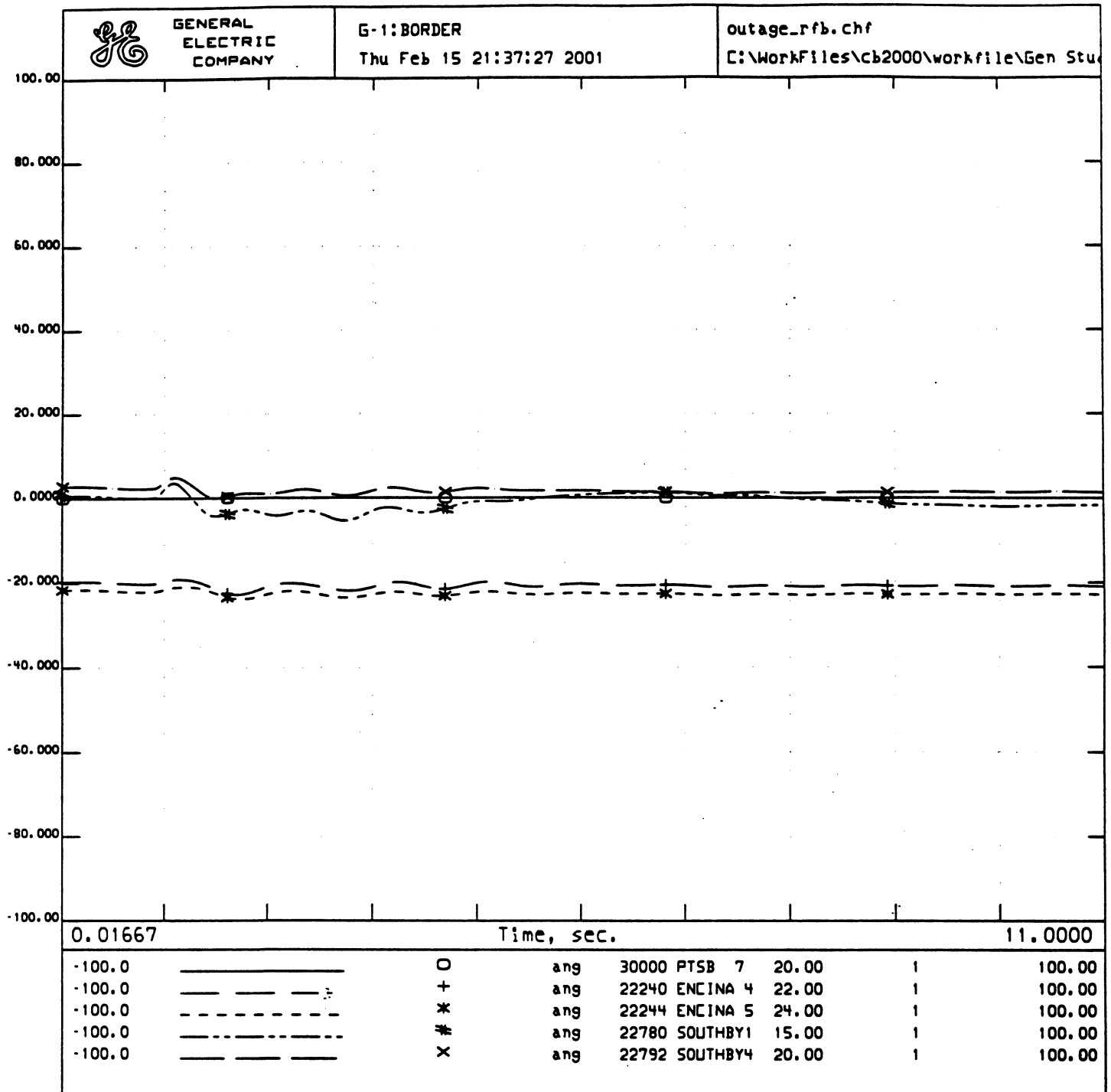
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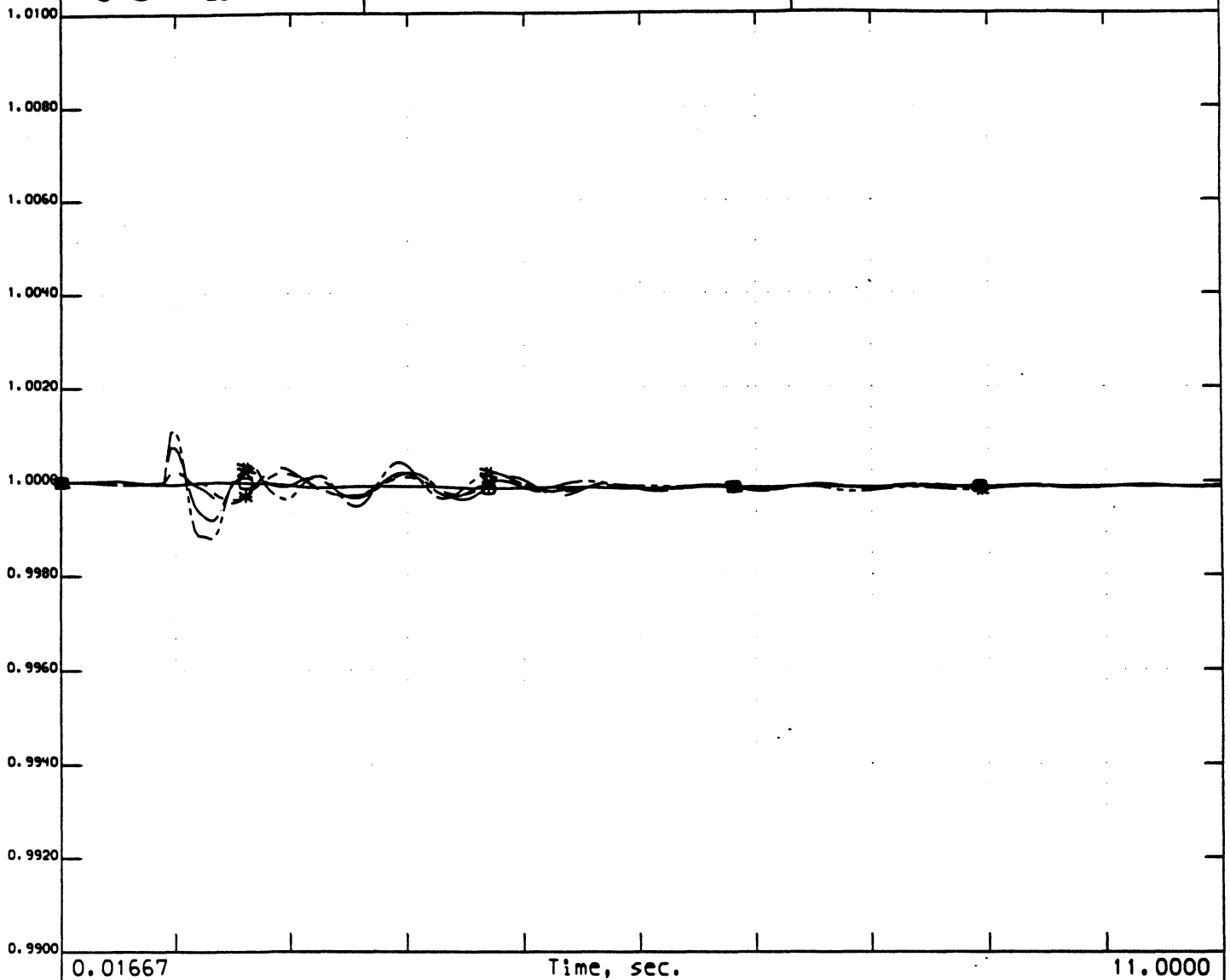
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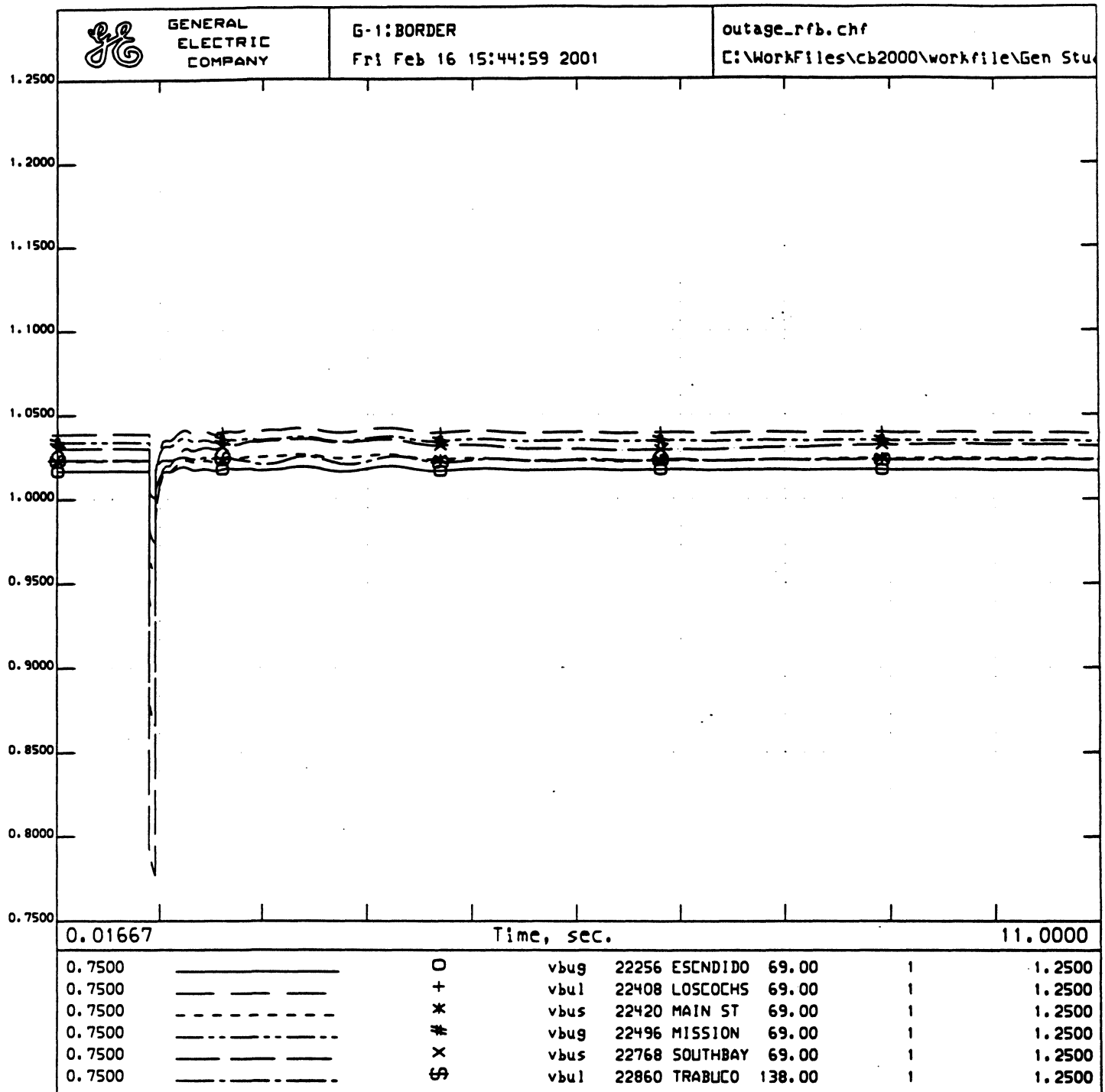
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2001 RFB Interconnection Study
Trip MISSION unit
2001 Heavy Summer Case
Study for DG Power Generation Project

RUN

*** Fault bus at Mission**
FB 0.0 "MISSION " 69.

*** Clear fault bus at EL CAJON**
CFB 4.0 "MISSION " 69.

*** Trip EL CAJON gen**
TG 4.0 "MISSION " 69. "*"**



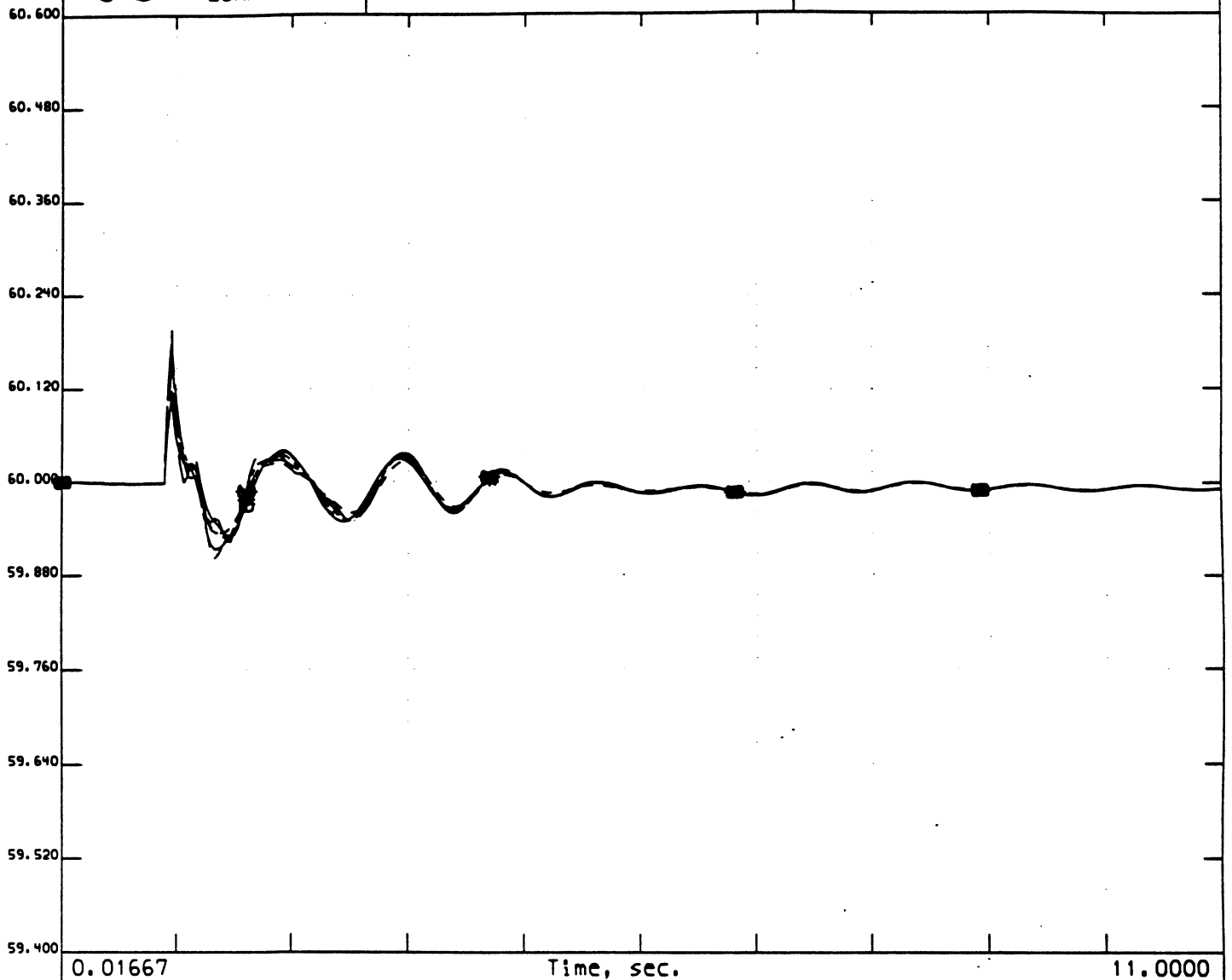
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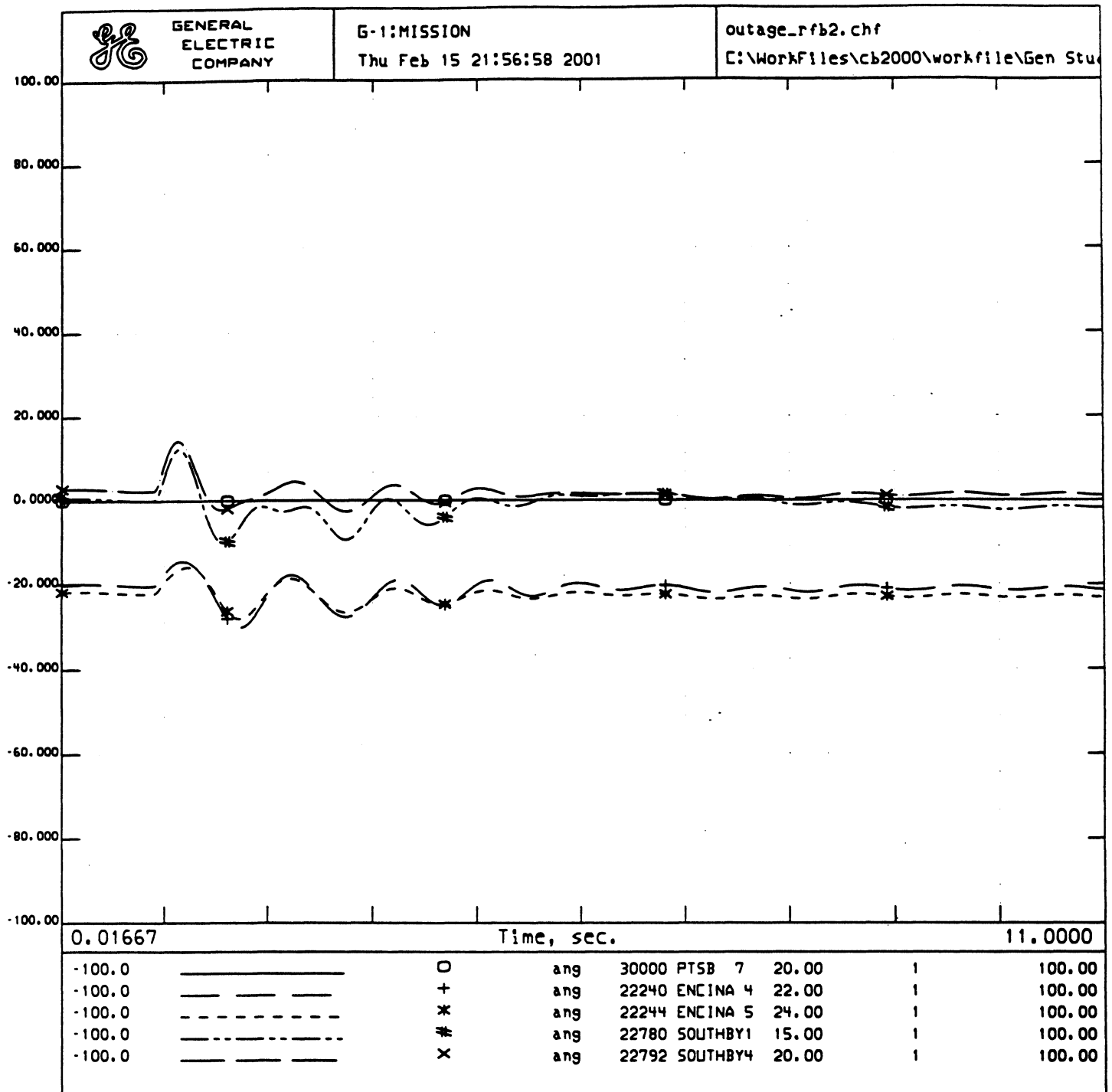
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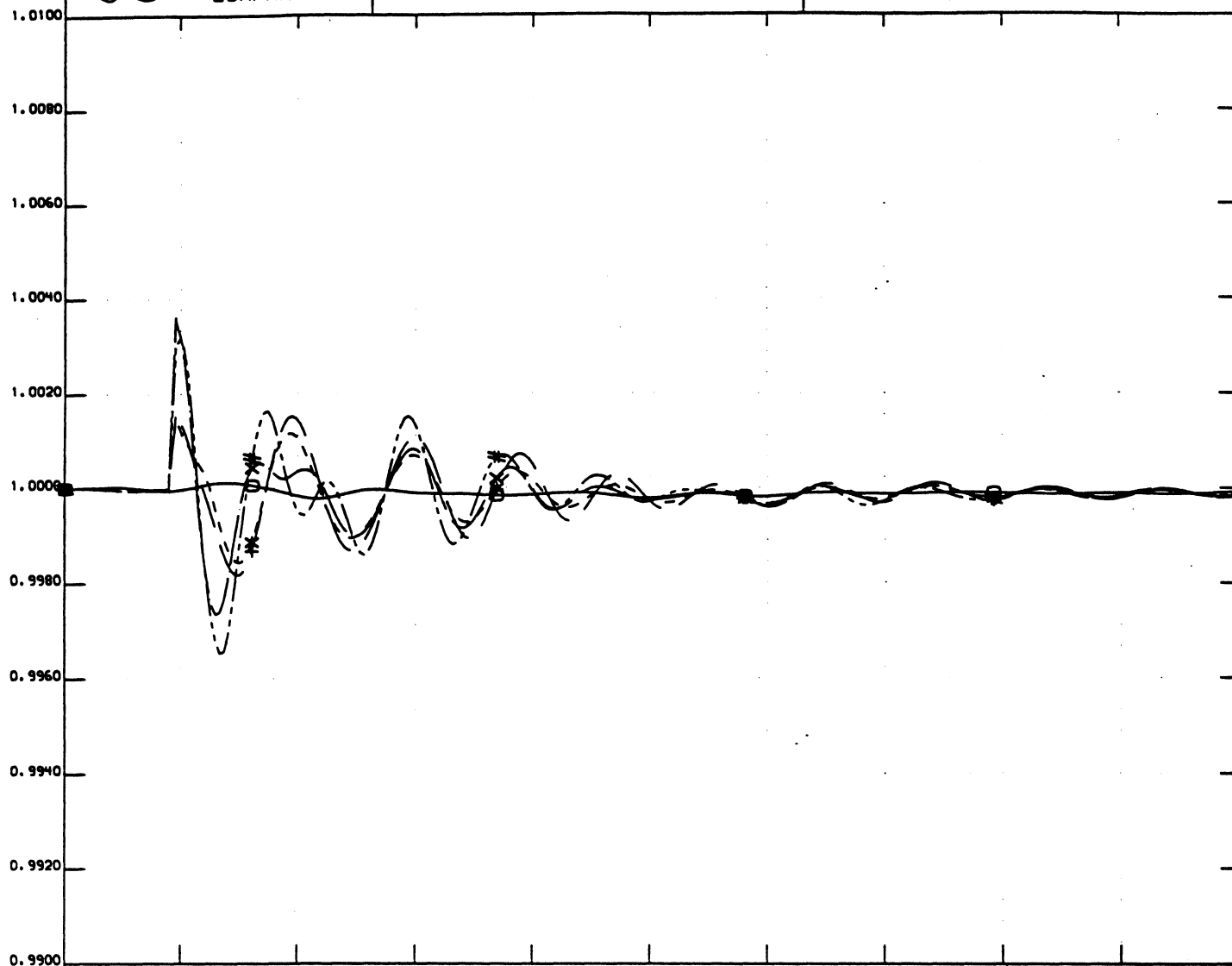
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:57:51 2001

outage_rfb2.chf

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0.01667		Time, sec.						11.0000
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0.9900	_____	+	spd	22240	ENCINA 4	22.00	1	1.0100
0.9900	-----	*	spd	22244	ENCINA 5	24.00	1	1.0100
0.9900	-----	#	spd	22780	SOUTHBY1	15.00	1	1.0100
0.9900	_____	x	spd	22792	SOUTHBY4	20.00	1	1.0100

2001 RFB Interconnection Study

Trip MISSION unit

2001 Heavy Summer Case

Study for DG Power Generation Project

Built by SDG&E Transmission Planning Section, 12/02/00

1/28: changed sycamore qf to carlton hills qf

2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast

2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt



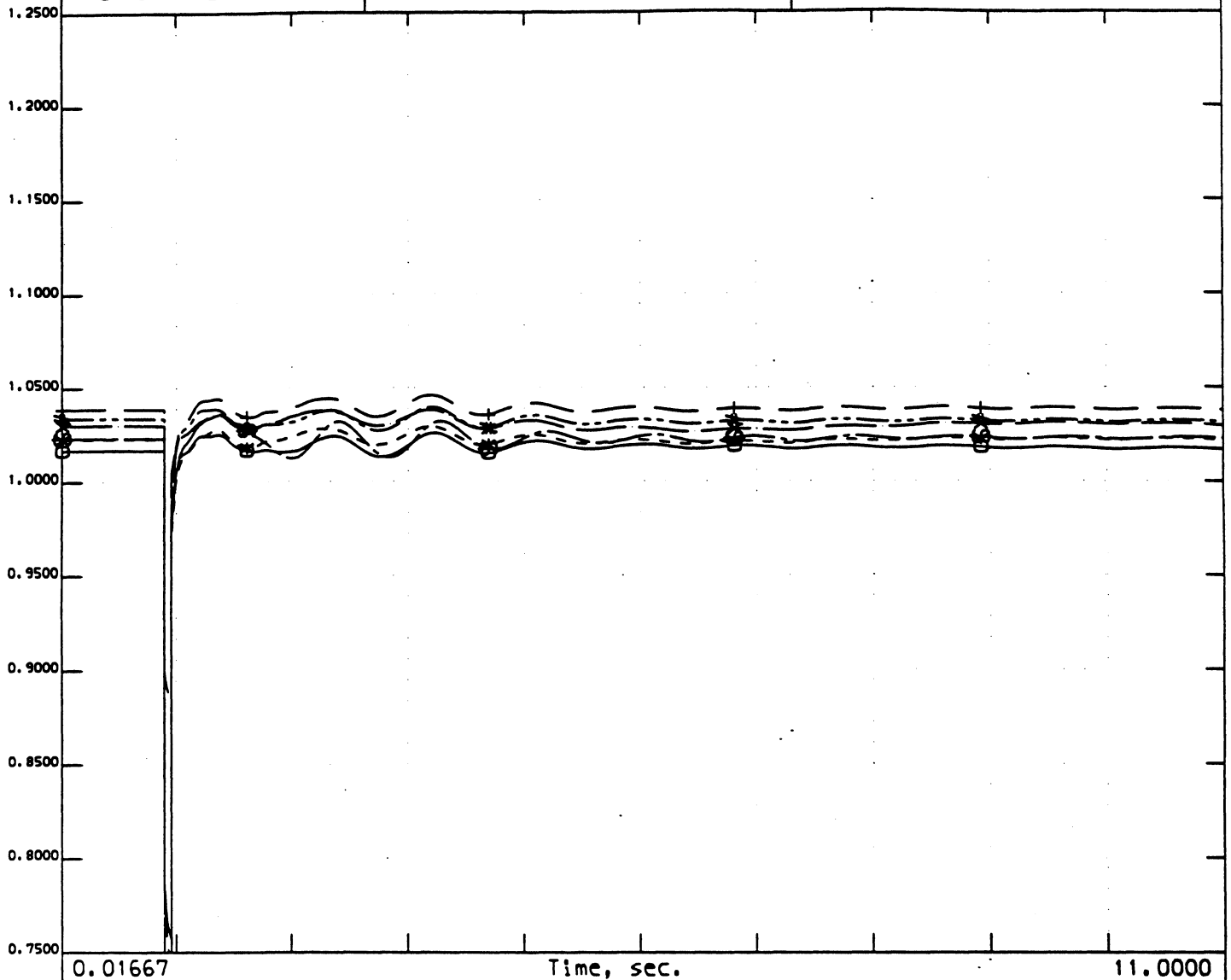
GENERAL
ELECTRIC
COMPANY

G-1:MISSION

Thu Feb 15 21:58:21 2001

outage_rfb2.chf

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0.01667		Time, sec.					11.0000
0.7500	_____	O	vbug	22256 ESCNDIDO	69.00	1	1.2500
0.7500	_____	+	vbul	22408 LOSCOCHS	69.00	1	1.2500
0.7500	-----	*	vbus	22420 MAIN ST	69.00	1	1.2500
0.7500	-----	#	vbug	22496 MISSION	69.00	1	1.2500
0.7500	_____	X	vbus	22768 SOUTHBAY	69.00	1	1.2500
0.7500	-----	\$	vbul	22860 TRABUCO	138.00	1	1.2500

2001 RFB Interconnection Study
Trip MISSION unit
2001 Heavy Summer Case
Study for DG Power Generation Project
Built by SDG&E Transmission Planning Section, 12/02/00

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2/7: changed shunts to svd's per svd.epc file

2/8: rev'd hdt

2/8: rev'd load forecast


2/28: rev'd hst. adi Vsch for svd buses. adi taps hdt

APPENDIX C

FUEL INTERCONNECTION APPLICATION



San Diego Gas & Electric
8315 Century Park Court
San Diego, CA 92123-1550

A  Semptra Energy company

File No. PLA 580

Mr. Darryl Franklin
DG Power, Inc.
1361 Shorebird Lane
Carlsbad, CA 92009

Dear Darryl:

Subject: GAS SERVICE TO PROPOSED POWER PLANTS

In accordance with our "RULES FOR THE SALE OF GAS", filed and approved by the California Public Utilities Commission, gas facilities can be made available to the following locations:

1701 Harvest Road
San Diego, California

3037 Mission Avenue
Escondido, California

9060 Friars Road
San Diego, California

NW Corner of North Main Street and Johnson Avenue
El Cajon, California

Costs for the installation and/or extension of utility service will be calculated in conformance with our extension and service rules.

Our ability to serve future projects in our service territory will depend on the supply of fuel and other essential materials available to us and on our obtaining government authorization to construct the facilities required.

Sincerely,


Cary A. Likes
Team Leader
Project Management Metro
(858) 636-3950

CAL/jc

APPENDIX D
WATER SUPPLY AGREEMENT



...Dedicated to Community Service

2554 SWEETWATER SPRINGS BOULEVARD, SPRING VALLEY, CALIFORNIA 91978-2095
TELEPHONE: 670-2222, AREA CODE 619

VIA FAX (619) 239-1307

June 5, 2001

Mr. Glenn Sampson
CALPEAK POWER
701 "B" Street
San Diego, CA 92101.

Subject: Will Serve Letter - APN 646-130-46

Dear Mr. Sampson;

This letter is in response to your request for Otay Water District to provide the County of San Diego a letter indicating that the parcel will be provided adequate water service and long term water storage facilities.

The Otay Water District has the terminal water storage capacity to serve the above referenced project. The District has a 12" ACP Class 200 water main in Sanyo Avenue, located to the east, and a 16" CCP Class 200 water main on Otay Mesa Road, located to the west.

Water availability is subject to all Otay Water District requirements in effect at the time. The developer may be required to submit improvement plans for District approval. Irrigation plans must be designed to reclaim standards and specifications and submitted to the District and the Department of Environmental Health for plan check and approval, prior to the purchase of any irrigation meters.

The applicant should contact the projects fire agency, for any fire protection requirements. The Otay Water District should be contacted at (619) 670-2241, regarding service laterals, backflow devices, and/or meter costs.

If you have any questions, please call me at (619) 670-2241.

Sincerely,

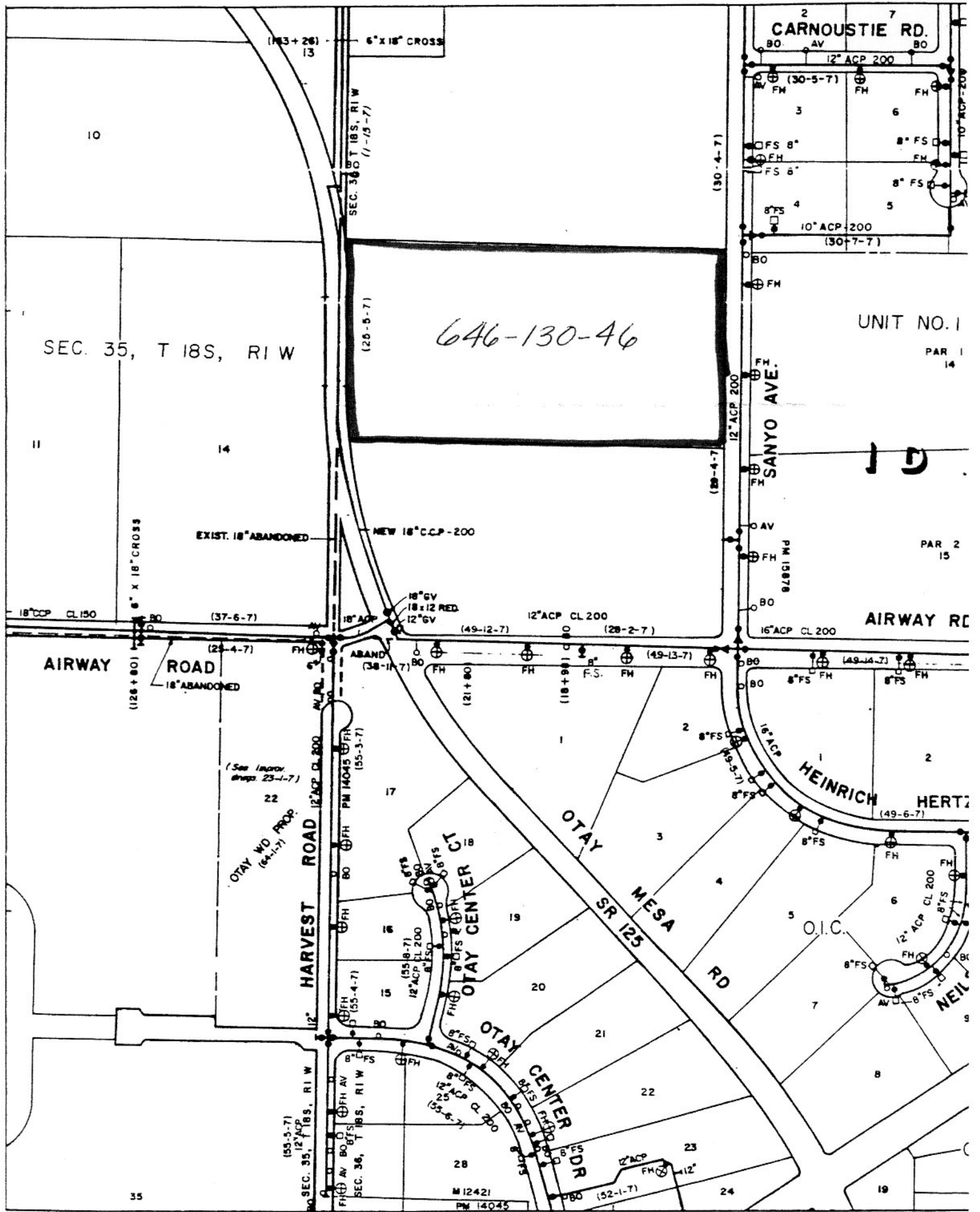
David T. Charles
Engineering Customer Service Manager

DTC/cb

RECEIVED

JUN 05 2001

CALPEAK POWER



1785E

1787E

INDEX TO ADJOINING SHEET

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11	12	13

APPENDIX E

PARCELS AND PROPERTY OWNERS WITHIN 500-FOOT RADIUS OF PROJECT SITE AND PROJECT LINEARS

# 1	*-----: MetroScan / San Diego :-----*			
Owner	:Sunroad Otay Partners L P	Parcel	:646 080 08 00	
Site	:Otay Mesa Rd	Xfered	:12/19/1997	
Mail	:1455 Frazee Rd #1000 San Diego Ca 92108	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:87.42
# 2	*-----: MetroScan / San Diego :-----*			
Owner	:Roll Carl P & Jean I Trs	Parcel	:646 121 09 00	
Site	:Harvest Rd San Diego	Xfered	:05/11/1982	
Mail	:PO Box 879 Chula Vista Ca 91912	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:9.53
# 3	*-----: MetroScan / San Diego :-----*			
Owner	:Roll Carl P & Jean I Trs	Parcel	:646 121 10 00	
Site	:Harvest Rd San Diego	Xfered	:05/11/1982	
Mail	:PO Box 879 Chula Vista Ca 91912	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:17.23
# 4	*-----: MetroScan / San Diego :-----*			
Owner	:Roll Carl P & Jean I Trs	Parcel	:646 121 13 00	
Site	:*No Site Address* San Diego	Xfered	:05/11/1982	
Mail	:PO Box 879 Chula Vista Ca 91912	Price	:	
LandUse	:850 Vacant,Water Available	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:7.48
# 5	*-----: MetroScan / San Diego :-----*			
Owner	:Roll Carl P & Jean I Trs	Parcel	:646 121 14 00	
Site	:*No Site Address* San Diego	Xfered	:05/11/1982	
Mail	:PO Box 879 Chula Vista Ca 91912	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:17.91
# 6	*-----: MetroScan / San Diego :-----*			
Owner	:County Of San Diego	Parcel	:646 130 09 00	
Site	:*No Site Address* San Diego	Xfered	:10/29/1987	
Mail	:Public Agency	Price	:	
LandUse	: *Unknown Use Code*	OwnerPh	:	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:.01
# 7	*-----: MetroScan / San Diego :-----*			
Owner	:San Diego Development Group	Parcel	:646 130 37 00	
Site	:Otay Mesa Rd San Diego	Xfered	:02/03/1989	
Mail	:362 W Garvey Ave Monterey Park Ca 91754	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:318,330	YB:	Pool: Ac:17.14
# 8	*-----: MetroScan / San Diego :-----*			
Owner	:San Diego Gas & Electric Co	Parcel	:646 130 45 00	
Site	:Harvest Rd San Diego	Xfered	:10/02/1985	
Mail	:California State Assessed	Price	:	
LandUse	: *Unknown Use Code*	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:800	YB:	Pool: Ac:1.87

# 9	*-----: MetroScan / San Diego :-----*			
Owner	:C I F Holdings L P	Parcel	:646 130 46 00	
Site	:Harvest Rd San Diego	Xfered	:01/10/1996	
Mail	:6363 El Cajon Blvd #206 San Diego Ca 92115	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:18.14
# 10	*-----: MetroScan / San Diego :-----*			
Owner	:C I F Holdings L P	Parcel	:646 130 48 00	
Site	:Otay Mesa Rd San Diego	Xfered	:09/16/1999	
Mail	:6363 El Cajon Blvd #206 San Diego Ca 92115	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:8.69
# 11	*-----: MetroScan / San Diego :-----*			
Owner	:C I F Holdings L P	Parcel	:646 130 49 00	
Site	:Harvest Rd San Diego	Xfered	:01/10/1996	
Mail	:6363 El Cajon Blvd #206 San Diego Ca 92115	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:21.53
# 12	*-----: MetroScan / San Diego :-----*			
Owner	:San Diego Gas & Electric Co	Parcel	:646 130 50 00	
Site	:Harvest Rd San Diego	Xfered	:12/22/1997	
Mail	:PO Box 1831 San Diego Ca 92112	Price	:\$192,500 FULL	
LandUse	: *Unknown Use Code*	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:2.34
# 13	*-----: MetroScan / San Diego :-----*			
Owner	:Pinos Produce Inc	Parcel	:646 131 01 00	
Site	:1710 Dornoch Ct San Diego 92154	Xfered	:08/05/1994	
Mail	:8799 Balboa Ave #260 San Diego Ca 92123	Price	:	
LandUse	:743 Ind,Warehouse,Processing,Storage	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:100.07	Block:1		
Bedrm	: Bathrms:	BldgSF:81,425	YB:1989	Pool: Ac:2.35
# 14	*-----: MetroScan / San Diego :-----*			
Owner	:Casio Manufacturing Corp	Parcel	:646 131 03 00	
Site	:Carnoustie Rd San Diego	Xfered	:03/02/1989	
Mail	:1840 Dornoch Ct San Diego Ca 92154	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:75,882	YB:	Pool: Ac:2.13
# 15	*-----: MetroScan / San Diego :-----*			
Owner	:Casio Manufacturing Corp	Parcel	:646 131 04 00	
Site	:1840 Dornoch Ct San Diego 92154	Xfered	:03/02/1989	
Mail	:1840 Dornoch Ct San Diego Ca 92154	Price	:	
LandUse	:743 Ind,Warehouse,Processing,Storage	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:100.07	Block:1		
Bedrm	: Bathrms:	BldgSF:74,300	YB:1990	Pool: Ac:2.15
# 16	*-----: MetroScan / San Diego :-----*			
Owner	:Casio Manufacturing Corp	Parcel	:646 131 05 00	
Site	:Dornoch Ct San Diego	Xfered	:03/02/1989	
Mail	:1840 Dornoch Ct San Diego Ca 92154	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:2.19

# 17	*-----: MetroScan / San Diego :-----*			
Owner	:Casio Manufacturing Corp	Parcel	:646 131 06 00	
Site	:Dornoch Ct San Diego	Xfered	:03/02/1989	
Mail	:1840 Dornoch Ct San Diego Ca 92154	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:2.06
# 18	*-----: MetroScan / San Diego :-----*			
Owner	:Pinos Produce Inc	Parcel	:646 131 08 00	
Site	:Dornoch Ct San Diego	Xfered	:08/05/1994	
Mail	:8799 Balboa Ave #260 San Diego Ca 92123	Price	:	
LandUse	:740 Vacant,Industrial	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:2.44
# 19	*-----: MetroScan / San Diego :-----*			
Owner	:Sanyo E & E Corp	Parcel	:646 131 14 00	
Site	:2001 Sanyo Ave San Diego 92154	Xfered	:02/27/1987	
Mail	:2001 Sanyo Ave San Diego Ca 92154	Price	:	
LandUse	:743 Ind,Warehouse,Processing,Storage	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:100.07	Block:1		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:18.87
# 20	*-----: MetroScan / San Diego :-----*			
Owner	:Dornach Ranch L P	Parcel	:646 131 16 00	
Site	:1790 Dornoch Ct San Diego 92154	Xfered	:03/07/1994	
Mail	:4895 Alberson Ct San Diego Ca 92130	Price	:	
LandUse	:743 Ind,Warehouse,Processing,Storage	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:100.07	Block:1		
Bedrm	: Bathrms:	BldgSF:54,216	YB:1989	Pool: Ac:3.83
# 21	*-----: MetroScan / San Diego :-----*			
Owner	:Sanyo North America Corp	Parcel	:646 131 17 00	
Site	:2055 Sanyo Ave San Diego 92154	Xfered	:03/04/1991	
Mail	:2055 Sanyo Ave San Diego Ca 92154	Price	:	
LandUse	:743 Ind,Warehouse,Processing,Storage	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:100.07	Block:1		
Bedrm	: Bathrms:	BldgSF:167,377	YB:	Pool: Ac:18.87
# 22	*-----: MetroScan / San Diego :-----*			
Owner	:Nextel Of California Inc <Lf> Sanyo Nort	Parcel	:646 131 18 00	
Site	:Sanyo Ave San Diego	Xfered	:01/01/1999	
Mail	:State Assessed	Price	:	
LandUse	: *Unknown Use Code*	OwnerPh	:	
MapGrid	:1352 A2			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:
# 23	*-----: MetroScan / San Diego :-----*			
Owner	:Ellis George M Trust 07-18-89 Et Al	Parcel	:646 240 48 00	
Site	:Otay Mesa Rd	Xfered	:02/25/1997	
Mail	:2955 Plaza Leonardo Bonita Ca 91902	Price	:	
LandUse	:850 Vacant,Water Available	OwnerPh	:619-479-9526	
MapGrid	:			
Census	:Tract:	Block:		
Bedrm	: Bathrms:	BldgSF:	YB:	Pool: Ac:38.87

646 080 08 00
Sunroad Otay Partners L P
1455 Frazee Rd #1000
San Diego, CA 92108

646 121 09 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 10 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 13 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 14 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 130 09 00
County Of San Diego
Public Agency
, CA

646 130 37 00
San Diego Development Group
362 W Garvey Ave
Monterey Park, CA 91754

646 130 45 00
San Diego Gas & Electric Co
California State Assessed
, CA

646 130 46 00
C I F Holdings L P
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 48 00
C I F Holdings L P & C I F Holdings L
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 49 00
C I F Holdings L P
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 50 00
San Diego Gas & Electric Co
PO Box 1831
San Diego, CA 92112

646 131 01 00
Pinos Produce Inc
8799 Balboa Ave #260
San Diego, CA 92123

646 131 03 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 04 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 05 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 06 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 08 00
Pinos Produce Inc
8799 Balboa Ave #260
San Diego, CA 92123

646 131 14 00
Sanyo E & E Corp
2001 Sanyo Ave
San Diego, CA 92154

646 131 16 00
Dornach Ranch L P
4895 Alberson Ct
San Diego, CA 92130

646 131 17 00
Sanyo North America Corp
2055 Sanyo Ave
San Diego, CA 92154

646 131 18 00
Nextel Of California Inc <Lf> Sanyo N
State Assessed
, CA

646 240 48 00
George Ellis & Joseph & Carme Ellis
2955 Plaza Leonardo
Bonita, CA 91902

646 080 08 00
Sunroad Otay Partners L P
1455 Frazee Rd #1000
San Diego, CA 92108

646 121 09 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 10 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 13 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 121 14 00
Carl & Jean Roll
PO Box 879
Chula Vista, CA 91912

646 130 09 00
County Of San Diego
Public Agency
, CA

646 130 37 00
San Diego Development Group
362 W Garvey Ave
Monterey Park, CA 91754

646 130 45 00
San Diego Gas & Electric Co
California State Assessed
, CA

646 130 46 00
C I F Holdings L P
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 48 00
C I F Holdings L P & C I F Holdings L
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 49 00
C I F Holdings L P
6363 El Cajon Blvd #206
San Diego, CA 92115

646 130 50 00
San Diego Gas & Electric Co
PO Box 1831
San Diego, CA 92112

646 131 01 00
Pinos Produce Inc
8799 Balboa Ave #260
San Diego, CA 92123

646 131 03 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 04 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 05 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 06 00
Casio Manufacturing Corp
1840 Dornoch Ct
San Diego, CA 92154

646 131 08 00
Pinos Produce Inc
8799 Balboa Ave #260
San Diego, CA 92123

646 131 14 00
Sanyo E & E Corp
2001 Sanyo Ave
San Diego, CA 92154

646 131 16 00
Dornach Ranch L P
4895 Alberson Ct
San Diego, CA 92130

646 131 17 00
Sanyo North America Corp
2055 Sanyo Ave
San Diego, CA 92154

646 131 18 00
Nextel Of California Inc <Lf> Sanyo N
State Assessed
, CA

646 240 48 00
George Ellis & Joseph & Carme Ellis
2955 Plaza Leonardo
Bonita, CA 91902

8 AG PR (C)
87.42 AC

APPENDIX F
AGREEMENT FOR LEASE OF REAL PROPERTY

GROUND LEASE
BY AND BETWEEN
CIF HOLDINGS, L.P.,
as Landlord
AND
CALPEAK POWER, LLC,
as Tenant

Dated June 8, 2001

GROUND LEASE

This GROUND LEASE (the "Lease") is made and entered into as of June 8, 2001 (the "Effective Date"), by and between CIF HOLDINGS, L.P., a California limited partnership ("Landlord"), and CALPEAK POWER, LLC, a Delaware limited liability company or its designated affiliate ("Tenant"), with respect to the following:

RECITALS

A. Landlord desires to lease the Premises (as defined below) to Tenant and Tenant desires to lease the Premises from Landlord.

B. The parties desire to enter into this Lease to set forth their rights and obligations relating to the Premises.

NOW, THEREFORE, in consideration of the rents and covenants hereafter set forth, and for other good and valuable consideration, Landlord hereby leases the Premises to Tenant and Tenant hereby takes and hires the Premises from Landlord, upon the following terms and conditions:

ARTICLE I PREMISES

Section 1.01 Premises Defined. Subject to the provisions of Section 1.02 below, the "Premises" consist of the following:

(a) That certain real property located within the City of San Diego (the "City"), County of San Diego, State of California, consisting of approximately 18.14 acres and more particularly described on Exhibit "A" and depicted on Exhibit "B" attached hereto and incorporated herein by this reference (the "Land");

(b) All right, title and interest of Landlord, if any, in and to the land lying in the bed of any street or highway in front of or adjoining such Land;

(c) All present or future rights, privileges, easements or appurtenances to such Land, including air, development and water rights (including, the right to pump and use the same); provided, however, that Landlord reserves to itself all oil, gas, and mineral rights in and to the Land but without right of entry on the surface or within 200 feet thereof; and

(d) Any strips or gores adjoining the Land, and all licenses, easements, rights-of-way, claims, rights or benefits, covenants, conditions and servitudes and all other appurtenances used or connected with the beneficial use or enjoyment of the Land.

Section 1.02 Useable Premises and Adjacent Premises Defined; Subdivision Map Act Compliance and Limitations with Respect to Adjacent Premises.

(a) Useable Premises and Adjacent Premises Defined. As used herein, the Useable Premises shall mean that portion of the Premises consisting of approximately 195,000 square feet bordered on the west by the public road known as Harvest Road and located as depicted on Exhibit "B" attached hereto. The balance of the Premises, which is also bordered on the west by the public road known as Harvest Road shall be referred to herein as the "Adjacent Premises." The Adjacent Premises is also approximately depicted as the cross-hatched areas on Exhibit "B" attached hereto. Landlord and Tenant acknowledge and agree that the boundaries of the Useable Premises and the Adjacent Premises may be adjusted during the Map Approval process described in Section 1.02(c) below so long as (i) the Useable Premises continues to be abutted by the Adjacent Premises and (ii) so long as such adjustments do not materially affect the usability of the Useable Premises for the purpose described herein as determined by Tenant or materially change the number of square feet in or the configuration of the Useable Premises, unless in each case approved by Tenant and Landlord in their respective sole and absolute discretion.

(b) Subdivision Map Act Compliance. As of the date hereof, Landlord and Tenant acknowledge and agree that the Useable Premises and the Adjacent Premises do not constitute separate, distinct legal parcels pursuant to the requirements of the California Subdivision Map Act (Cal. Gov. Code §§ 66410 et seq.) (the "Map Act"). Accordingly, in order to ensure that this Lease complies with the Map Act, to and until the Map Approval Effective Date (as defined below), if at all, Tenant shall lease the entire Premises from Landlord.

(c) Map Approval.

(i) Tenant's Actions. Subject to the provisions of clause (ii) below, following the Effective Date, Tenant agrees to use commercially reasonable, good faith efforts to obtain a Map Approval, so that Tenant may lease and finance the Useable Premises in compliance with the Map Act. As used herein the term "Map Approval" shall mean that the leasing and financing of the Useable Premises complies with the Map Act under any of the following approaches: (A) confirmation in writing from the applicable governmental authority with jurisdiction that the leasing and financing of the Useable Premises, in connection with the construction of an electrical generating facility is exempt from the Map Act pursuant to Sections 66428 or 66412.1 of the Map Act or otherwise; or (B) the processing and recordation of a lot line adjustment between the Useable Premises, the Adjacent Premises and (if required) other immediately adjacent property owned by Landlord ("Landlord's Adjacent Property") pursuant to which the Useable Premises become a separate legal parcel; (C) issuance and recordation by the applicable governmental authority of a certificate of compliance for the Useable Premises pursuant to Section 66499.35 of the Map Act authorizing the lease, sale and financing of the Useable Premises as a separate legal parcel without the necessity for recordation of a parcel map; or (D) the processing and recordation of a parcel map pursuant to the Map Act pursuant to which the Useable Premises become a separate legal parcel. Tenant shall only pursue a certificate of compliance or a parcel map if an exemption or lot line adjustment are unavailable as reasonably determined by Tenant. The date that any of the foregoing approaches shall become effective such that the Useable Premises shall constitute a separate distinct legal parcel under the Map Act (or shall otherwise be deemed to be exempt therefrom) shall be referred to herein as the "Map

Approval Effective Date." Tenant shall keep Landlord apprised of the Map Approval process and shall not make proposals which would interfere, hinder or impede in any material way Landlord's intended use of the Adjacent Premises and Landlord's Adjacent Property as described by Landlord to Tenant. So long as Tenant is pursuing Map Approval pursuant to this clause (i), Landlord covenants to cooperate fully with and to assist Tenant in connection with Tenant's processing and recordation of the applicable Map Approval(s), including, without limitation, executing and delivering to Tenant, within five (5) days of each request, all applications and documents requested by Tenant in connection therewith. So long as Tenant is pursuing the Map Approval pursuant to this clause (i), Tenant shall be solely responsible for all costs incurred in connection with the same, including the cost to satisfy all governmental conditions, if any, imposed in connection with any such Map Approval, other than Off-Site Conditions (as hereinafter defined). Subject to the provisions of clause (iii) below, whether or not Tenant is processing the Map Approval pursuant to this clause (i) or Landlord has elected to assume responsibility for the same pursuant to clause (ii) below, all Off-Site Conditions shall at all times be the sole responsibility of Landlord, both as to performance and payment of costs therefor. As used herein, "Off-Site Conditions" shall mean any governmental conditions, if any, imposed in connection with any such Map Approval that involves property other than the Useable Premises (including, without limitation, off-site property dedications, off-site improvements, or the like) or involves the payment of fees or exactions in connection with the development of any property other than the Useable Premises. Tenant's failure to obtain Map Approval under this clause (i) shall not be deemed a default under this Lease and Landlord shall have no right to terminate this Lease for Tenant's failure; provided, however, that, so long as Landlord has not made the election provided for in clause (c)(ii) below, if such Map Approval is not obtained within twenty-four months of the Effective Date (the "Map Approval Cutoff Date"), Tenant shall be required to pay Special Additional Rent as provided for in Section 3.01(c), until such time as the Map Approval Effective Date shall have occurred.

(ii) Landlord's Actions. The parties acknowledge that prior to the execution and delivery of this Lease, Landlord had begun the process of planning for the subdivision of the Premises together with Landlord's Adjacent Property and that Landlord has retained the services of consultants and others to assist in the development of the subdivision. Accordingly, at any time prior to the Map Approval Effective Date, Landlord shall have the option (the "Landlord Map Approval Option"), exercisable in writing to Tenant, at Landlord's sole cost and expense, to take over and assume responsibility for the Map Approval process as it relates to the Useable Premises and to process such Map Approval concurrently with the subdivision of the Adjacent Premises and Landlord's Adjacent Property. If Landlord elects to process the Map Approval for the Useable Premises as provided in this clause (ii), Landlord, subject to clause (iii) below, shall be solely responsible, both as to performance and payment of costs therefor, to complete such Map Approval for the Useable Premises, including, but not limited to, of any and all conditions necessary to obtain governmental approval of the Map Approval and any costs imposed in connection therewith. Tenant covenants to fully cooperate so as to assist Landlord in connection with Landlord's processing and recordation of the Map Approval, including, without limitation, executing and delivering to Landlord, within five (5) days of each request, all applications and documents requested by Landlord in connection therewith; provided, however, that Tenant, in its sole discretion, may refuse to cooperate and withhold its consent if the Map Approval (or any governmental conditions imposed in connection therewith) would interfere, hinder or impede in

any material way its improvements upon the Useable Premises or the conduct of Tenant's activities upon the Useable Premises. If Landlord elects to process the Map Approval pursuant to this clause (ii), Tenant shall be relieved of its obligation to pay Special Additional Rent pursuant to clause (c)(i) above, and accordingly Tenant shall not be obligated to pay Special Additional Rent commencing on the Map Approval Cutoff Date or, if Tenant has already begun paying Special Additional Rent, Tenant shall be relieved of such obligation effective as of the date Landlord elects to process the Map Approval pursuant to this clause (ii).

(iii) Tenant shall pay, or reimburse Landlord, for any improvements required to be constructed on the Adjacent Premises or Landlord's Adjacent Property by any governmental agency to the extent such construction is caused by Tenant's project and specified in the permits and approvals obtained by Tenant to use, occupy, and construct its contemplated improvements on the Useable Premises. Notwithstanding the foregoing, Landlord shall have the right to require Tenant to modify its proposed improvements on the Adjacent Premises or Landlord's Adjacent Property, provided Landlord bears the increased costs associated with such changes. For illustration purposes only, and not as a limitation on Landlord's rights under this clause (iii), if Tenant's approvals permit access to the Useable Premises by a ground two lane road running from Harvest Road through the Adjacent Premises, Landlord may require Tenant to instead construct a bridge to accommodate a multi-lane road, provided Landlord pay the difference in the costs of constructing the ground road and the cost of constructing the bridge.

(d) Amendment to Lease. If the Map Approval Effective Date occurs, immediately upon such date, Landlord and Tenant shall execute and acknowledge (as applicable) an amendment to this Lease and a substitute for the short form memorandum of this Lease executed pursuant to Section 14.01 below, to amend the legal description of the Premises to that of the Useable Premises, and from and after such date all Landlord shall lease to Tenant, Tenant shall lease from Landlord, only the Useable Premises. Prior to execution, the parties shall prepare a legal description and depiction of the Useable Premises to be attached thereto.

(e) Limitations with Respect to Adjacent Premises. Subject to Tenant's right, title and interest in and to the Easements and Tenant's inspection and other rights with respect to the Adjacent Premises pursuant to the terms of this Lease, Landlord shall at all times retain a non-exclusive license to control and use the Adjacent Premises; provided, however, that at all times Landlord shall exercise its rights under this Section 1.02(e) only in compliance with the Map Act. In addition, solely to ensure that this Lease complies with the Map Act, Tenant shall lease the entire Premises until the Map Approval Effective Date. Accordingly, notwithstanding anything to the contrary in this Lease, (i) except as set forth in the Easements, except for Tenant's obligation (if any) to pay Special Additional Rent, and except for Tenant's obligations not to damage the Premises through the introduction of Hazardous Materials or otherwise, Tenant shall have no duties or obligations with respect to the Adjacent Premises, and (ii) unless the context otherwise requires, all subsequent references in this Lease to the Premises shall mean only the Useable Premises.

Section 1.03 Condition of the Premises. Landlord and Tenant hereby acknowledge that the Premises shall be delivered to Tenant on the Commencement Date in a substantially similar condition as the Premises exist on the Effective Date.

Section 1.04 Exceptions to Title. This Lease and the leasehold estate created hereunder are subject only to the Permitted Exceptions (as defined in Section 16.01(e) below).

Section 1.05 Easements Over Adjacent Premises. A general plot plan for Landlord's grant of easements to Tenant over the Adjacent Premises and Landlord's Adjacent Property is attached as Exhibit "C". Prior to the end of the Initial Period, Landlord and Tenant shall refine the general plot plan for Landlord's grant to Tenant of easements in, on, over, under and across the Adjacent Premises and Landlord's Adjacent Property (including without limitation easements to the SDG&E Substation located to the north of the Landlord's Adjacent Property) to be used in connection with Tenant's operations on the Useable Premises. On or prior to the Map Approval Effective Date, if such date occurs, and thereafter from time to time, Landlord shall grant to Tenant (and/or any public or private utility provider designated by Tenant) any non-exclusive easements, which shall be appurtenant to the Useable Premises, this Lease and Tenant's leasehold interest in the Useable Premises, in, on, over, under and across the Adjacent Premises and Landlord's Adjacent Property for the purpose of the construction, installation, maintenance, repair, replacement and removal from time to time of gas, electric, water, sewer, drainage and other utility improvements necessary or desirable for Tenant's use of the Useable Premises, including, but not limited to, the transmission of electricity to the SDG&E Substation located to the north of Landlord's Adjacent Property (collectively, the "Easements"). Notwithstanding the foregoing, Tenant shall not have the right to place any substantial above-ground facilities on the Adjacent Premises or Landlord's Adjacent Property, except as may be necessary for the transmission of electricity from the Useable Premises to such SDG&E Substation. Immediately upon Landlord's grant of an additional Easement to Tenant and promptly upon the request of Tenant or any of Tenant's leasehold mortgagees, Landlord shall execute, deliver, acknowledge and record in the public records all such documents and instruments as Tenant or any of its leasehold mortgagees shall reasonably request to confirm or effect such grants.

ARTICLE II TERM AND TERMINATION

Section 2.01 Term Defined. The term of this Lease (the "Term") shall mean the Initial Term (as defined below) and each Renewal Term (as defined below) for which a Renewal Option (as defined below) is exercised.

Section 2.02 Initial Term. The initial term of this Lease (the "Initial Term") shall be from the Commencement Date (as defined below), and shall continue for a period of ten (10) full Lease Years (as defined below), unless sooner terminated pursuant to the provisions of this Lease.

Section 2.03 Renewal Terms. Tenant shall have the absolute and unconditional right and option (each such right and option, a "Renewal Option") to extend the Term of this Lease upon the same terms and conditions as this Lease, for two (2) additional five (5) Lease Year periods (each, a "Renewal Term") following the Initial Term. Tenant shall exercise each Renewal Option, if at all, by giving Landlord notice of such exercise at least one (1) year before the expiration of the then current Term.

Section 2.04 Initial Period, Commencement Date and Lease Year Defined. For purposes of this Lease, there shall be an initial period (the "Initial Period") and a Term. The Term shall be

from the Commencement Date determined pursuant to subsection (b) below to and until the expiration or sooner termination of the Term. The Initial Period shall be the period from the Effective Date to and until the earlier of the Commencement Date or termination of this Lease pursuant to Article XVI below.

(b) The Commencement Date of this Lease (the "Commencement Date") shall be the first date on which all of the following have occurred: (i) delivery of possession of the Premises by Landlord to Tenant in the condition required by Section 1.03 above; and (ii) satisfaction or waiver of the last of the conditions specified in Article XVI below.

(c) As used herein, the term "Lease Year" shall mean each period of twelve (12) full calendar months from and after the Commencement Date, unless the Commencement Date is a day other than the first day of a calendar month, in which case the first Lease Year shall be the period commencing on the Commencement Date and ending on the last day of the twelfth (12th) month following the month in which the Commencement Date occurs and each subsequent Lease Year shall be each period of twelve (12) full calendar months after the last day of the prior Lease Year.

Section 2.05 Tenant's Early Termination. At any time during the Term, Tenant shall have the right to terminate this Lease prior to the end of the Term, provided, that: (i) Tenant shall not then be in default, beyond any applicable notice or cure period provided for herein; and (ii) Tenant shall provide Landlord at least six (6) months prior written notice from the termination date specified in Tenant's notice (the "Early Termination Date"). In consideration for Tenant's early termination of this Lease, Tenant shall: (a) pay all Base Rent through the Early Termination Date, and (b) within ten (10) days following the Early Termination Date make a payment equal to the aggregate total of Base Rent for the twelve (12) months following the Early Termination Date (including any applicable increases in Base Rent pursuant to Article III) (the "Early Termination Payment"). Following the Early Termination Date, each party shall faithfully perform any of its covenants and obligations that extend beyond the termination of this Lease.

Section 2.06 Termination. If this Lease is terminated by either party under any provision hereof, and/or upon the expiration of the Term of this Lease (collectively, the "Termination Date"), the following shall pertain: (a) Tenant's improvements on or to the Premises shall remain Tenant's property, and Tenant shall have ninety (90) days to remove such improvements along with all of Tenant's fixtures, equipment and other personal property from the Premises and to vacate and surrender possession of the Premises to Landlord in a clean, neat and orderly condition, in as near to the condition of the Premises as of the Commencement Date (excluding any landscaping or vegetation that exists on the Premises as of the Commencement Date, any changes due to events beyond the control of Tenant including but not limited to damage by earthquakes, flood, other natural hazards or natural growth of vegetation, and any changes required in connection with the Map Approval process); (b) to the extent Tenant is permitted to abandon Tenant's fixtures, equipment and other personal property, Tenant shall deliver to Landlord possession of the Premises, in its then current condition and state of repair, subject to Tenant's right to remove all of Tenant's improvements, fixtures, equipment and other personal property as provided above; (c) Tenant shall assign to Landlord, without recourse, and provide Landlord with copies or originals of, all Subleases (as defined below) and all assignable licenses, permits, contracts, warranties and guarantees then in effect for the Premises; (d) Tenant shall

execute such documents as may be reasonably requested by Landlord evidencing the surrender and reconveyance of the Premises; and (e) the parties shall apportion all taxes, utility and other expenses of the Premises. Any of Tenant's improvements, fixtures, equipment and other personal property not removed from the Premises within such ninety (90) day period after the Termination Date shall be deemed abandoned. During such ninety (90) day period: (i) Tenant may enter the Premises to remove such improvements, fixtures, equipment and other personal property, without being deemed a holdover; (ii) Landlord shall have no obligation to take affirmative action to preserve or protect such improvements, fixtures, equipment and other personal property; and (iii) in entering the Premises, Tenant shall comply with Landlord's reasonable instructions. Notwithstanding anything to the contrary in this Lease, Landlord shall have the right by written notice to Tenant given not less than sixty (60) days prior to the termination of the Term or within twenty (20) days after any earlier termination of the Lease, to require Tenant to remove any or all improvements, fixtures, equipment and other personal property constructed, installed or placed by Tenant, or any Subtenant (as defined below) in, on or about the Premises. In such event, Tenant shall remove the same at Tenant's sole cost and expense within the ninety (90) day period following the Termination Date, and shall deliver the Premises to Landlord possession of the Premises, in as near to the condition of the Premises as of the Commencement Date (excluding any landscaping or vegetation that exists on the Premises as of the Commencement Date, any changes due to events beyond the control of Tenant including but not limited to damage by earthquakes, flood, other natural hazards or natural growth of vegetation, and any changes required in connection with the Map Approval process).

ARTICLE III RENT AND SECURITY

Section 3.01 Initial Base Rent; Annual Increases During the Term; Special Additional Rent.

(a) Initial Base Rent. Subject to increase as and when provided in Section 3.01(b) below, Tenant shall pay to Landlord in advance for each month following the Commencement Date monthly "Base Rent" in the sum of Sixteen Thousand Two Hundred Fifty and 00/100 Dollars (\$16,250.00).

(b) Annual Increases During the Term. Upon the expiration of each Lease Year during the Term, the monthly Base Rent shall increase by four percent (4%); provided, however, that such increase shall be inapplicable to the first year of each Renewal Term, and the monthly Base Rent for such first (1st) Lease Year of each Renewal Term shall instead be determined pursuant to Section 3.02 below.

(c) Increase by Reason of Failure to Obtain Map Act Approval. Provided that (i) Landlord has not exercised its Landlord Map Approval Option pursuant to clause (ii) of Section 1.02(c) and (ii) the Map Approval Effective Date has not occurred on or before the commencement of the third (3rd) Lease Year, then in addition to monthly Base Rent as provided above, commencing on the third (3rd) Lease Year of the Term and continuing until the earlier of (A) the Map Approval Effective Date and (B) the date Landlord exercises its Landlord Map Approval Option, if either, Tenant shall pay in advance for each month monthly "Special Additional Rent" in the sum equal to Two Hundred percent (200%) of the Base Rent then in effect (prorated for any partial month during such period).

Section 3.02 Rent for Each Renewal Term.

(a) Renewal Term Rent. Monthly Base Rent for the first (1st) Lease Year of each Renewal Term shall be the lesser of (i) the greater of (A) the Fair Market Rental (as defined below) for the first (1st) Lease Year of such Renewal Term or (B) the Base Rent in effect prior to the commencement of such Renewal Term and (ii) 133% of the Base Rent in effect prior to the commencement of such Renewal Term. Upon Tenant's notice to Landlord that Tenant is exercising a Renewal Option as provided in Section 2.03 above, the Fair Market Rental (as defined below) shall be determined pursuant to Section 3.02(c) below.

(b) Fair Market Rental Defined. The Fair Market Rental shall mean the current monthly fair market rental value of the Premises (excluding any periodic increases therein), determined in accordance with the appraisal procedures set forth in Section 3.02(c) below, assuming the Premises is exposed on the open rental market at the time of the appraisal and that Tenant fully performs all obligations required by this Lease at a hypothetical termination.

(c) Determination of Fair Market Rental. Upon Tenant's exercise of a Renewal Term, Landlord and Tenant shall, in good faith, mutually determine the Fair Market Rental. If Landlord and Tenant are unable to agree upon the Fair Market Rental within thirty (30) days of Tenant's exercise of a Renewal Option, Tenant and Landlord shall, in good faith, mutually select an appraiser who will determine the Fair Market Rental. If Landlord and Tenant are unable to agree upon an appraiser, the Fair Market Rental shall be determined by an independent appraisal firm, in which one or more of the members, officers or principals of such firm are members of the Appraisal Institute (or any successor organization thereto), as may be reasonably selected by Landlord and approved by Tenant (the "Appraiser"). Landlord shall cause such Appraiser to determine the Fair Market Rental as of the relevant date and the determination of such Appraiser shall be final and binding upon the parties. A written report of such Appraiser shall be delivered and addressed to each of Landlord and Tenant. This provision for determination by appraisal shall be specifically enforceable to the extent such remedy is available under applicable law, and any determination hereunder shall be final and binding upon the parties. Landlord and Tenant shall each pay one-half (1/2) of the fees and expenses of the Appraiser(s) and one-half (1/2) of all other costs and expenses incurred in connection with such appraisal. If, however, Tenant, in good faith, objects to the Appraiser selected by Landlord, Tenant must provide notice to Landlord of Tenant's objection within five (5) days after Tenant's receipt of Landlord's selected Appraiser. If Tenant fails to provide such notice within such five (5) day period, then the Landlord selected Appraiser's determination of the Fair Market Rental shall be final and binding upon the parties. If Tenant does deliver such notice within the five (5) day period, then the following shall apply:

(i) Within ten (10) days after Tenant's receipt of Landlord's selected Appraiser, Tenant shall by notice to Landlord appoint a second Appraiser meeting the requirements set forth above to act on its behalf. In such event, the Appraisers thus appointed shall, within forty-five (45) days after the date of Landlord's notice of its originally selected Appraiser, proceed to determine the Fair Market Rental as of the relevant date; provided, however, that if Tenant fails to appoint its Appraiser within the time permitted, or if two Appraisers shall have been so appointed but only one such Appraiser shall have made such

determination within such forty-five (45) day period, then the determination of such sole Appraiser shall be final and binding upon the parties.

(ii) If the two Appraisers shall have been appointed and shall have made their determinations within the respective requisite periods set forth above and if the difference between the amounts so determined shall not exceed ten percent (10%) of the lesser of such amounts then the Fair Market Rental shall be an amount equal to fifty percent (50%) of the sum of the amounts so determined. If the difference between the amounts so determined shall exceed ten percent (10%) of the lesser of such amounts, then such two Appraisers shall have twenty (20) days to appoint a third Appraiser meeting the above requirements, but if such Appraisers fail to do so, then either party may request the American Arbitration Association ("AAA") or any successor organization thereto to appoint an Appraiser meeting the above requirements within twenty (20) days of such request, and both parties shall be bound by any appointment so made within such twenty (20) day period. If no such Appraiser shall have been appointed within such twenty (20) days or within ninety (90) days of the original request for a determination of Fair Market Rental, whichever is earlier, either Landlord or Tenant may apply to any court having jurisdiction to have such appointment made by such court. Any Appraiser appointed by the original Appraisers, by the AAA or by such court shall be instructed to determine the Fair Market Rental within thirty (30) days after appointment of such Appraiser.

(iii) The determination of the Appraiser which differs most in terms of dollar amount from the determinations of the other two Appraisers shall be excluded, and fifty percent (50%) of the sum of the remaining two determinations shall be final and binding upon Landlord and Tenant as the Fair Market Rental. This provision for determination by appraisal shall be specifically enforceable to the extent such remedy is available under applicable law, and any determination hereunder shall be final and binding upon the parties except as otherwise provided by applicable law.

(iv) If the foregoing two (2) or three (3) Appraiser system is utilized, then Landlord and Tenant shall each pay the fees and expenses of the Appraiser appointed by it and each shall pay one-half (1/2) of the fees and expenses of any third Appraiser.

Section 3.03 Payments of Base Rent.

(a) Monthly Payments. Monthly Base Rent shall be payable in advance on or before the tenth (10th) day of each calendar month from and after the Commencement Date. Subject to Section 3.03(b) below, the first and last monthly payment of Base Rent for any fractional part of a calendar month shall be a proportionate part of the monthly Base Rent for a full calendar month. Such proration and all other prorations pursuant to this Lease shall be made on the actual number of days in the applicable month.

(b) Prepaid Rent or Option Fee. Notwithstanding anything to the contrary in Section 3.03(a) above, the parties acknowledge that, within five (5) business days following the Effective date, Tenant shall deliver to Landlord the sum of One Hundred Thirteen Thousand and Seven Hundred Fifty Dollars (\$113,750), which represents prepaid rent for the Initial Period, at the rate of \$16,250 per month, assuming that the Initial Period lasts the full permitted seven (7) months. The parties further acknowledge and agree that said One Hundred Thirteen Thousand and Seven

Hundred Fifty Dollars (\$113,750) shall be deemed either (i) prepaid rent for the Initial Period and, if the Commencement Date occurs prior to the end of the full permitted seven (7) months, prepaid Base Rent for an allocable portion of the Term, if the conditions set forth in Article XVI and satisfied or waived by Tenant within the Initial Period or (ii) a non-refundable prepaid option fee if such conditions are not satisfied or waived within the Initial Period and this Lease is terminated pursuant to Section 16.03 below.

Section 3.04 Late Charges; Interest on Past Due Obligations. Tenant hereby acknowledges that late payment by Tenant to Landlord of Base Rent will cause Landlord to incur costs not contemplated hereunder, the exact amount of which is presently anticipated to be extremely difficult to ascertain. Accordingly, if any installment of Base Rent or portion of either shall not be paid within ten (10) business days after its due date, then Tenant shall pay a late charge equal to ten percent (10%) of such unpaid amount, and such unpaid amount (exclusive of the late charge) shall bear interest at the Interest Rate (as defined below), from the date due until paid. As used herein, the term "Interest Rate" shall mean the greater of (i) ten percent (10%) per annum, or (ii) the Eleventh District Cost of Funds in effect as of the 25th day of the calendar month preceding the date requiring the determination of the Interest Rate plus five percent (5%) per annum.

Section 3.05 Security.

(a) UT Finance Corporation, a Delaware corporation, shall guarantee the performance of certain of Tenant's obligations under this Lease by executing the Guaranty attached hereto as Exhibit "F".

ARTICLE IV TAXES AND UTILITY EXPENSES

Section 4.01 Taxes. Tenant agrees to pay all real estate taxes and special assessments assessed against the Premises during the Term of this Lease; provided, that Landlord shall have a separate plat for the Useable Premises, approved by Tenant, for tax purposes prepared and delivered to Tenant. In the event the local taxing authority will not permit a separate tax plat for the Useable Premises, then Landlord shall pay all such taxes and special assessments and notify Tenant of such. Upon Landlord's delivery to Tenant of paid receipts, Tenant shall reimburse Landlord for taxes related to Tenant's improvements and Tenant's share of taxes and assessments attributable to the entire Premises (computed by multiplying the total tax bill by a fraction, the numerator of which is the acreage of the Useable Premises and the denominator of which is the total acreage specified in the tax bill) within thirty (30) days of receipt hereof (but no earlier than thirty (30) days prior to delinquency). For any fraction of a tax period included in the Term (either at the beginning or end thereof), Tenant shall be responsible for that portion of the total taxes levied or assessed or becoming payable which is allocable to such included period, determined by multiplying the total taxes by a fraction whose denominator is the number of days in the tax period and whose numerator is the number of days in such period included in the Term. In the event that any special assessments are payable in installments, Tenant shall have the right to pay the same over the longest available installment period and Tenant shall not be obligated to pay any such installments due and payable outside the Term. Finally, as a material part of the consideration for Tenant's entering into this Lease, Landlord agrees that Tenant shall not be

responsible and/or obligated for any increase in taxes applicable to the Land which result, in whole or in part, from improvements made by the Landlord or from the actions of Landlord, its agents or any other parties whose relevant actions are based, in whole or in part, upon a contractual relationship with Landlord (including but not limited to a sale or transfer of all or part of Premises), in any reassessment or increase in such taxes. Notwithstanding the foregoing, Tenant shall be responsible for any increases in taxes applicable to the Useable Premises which result from a sale or transfer of the Premises or the Useable Premises by Landlord or Landlord's affiliate for which Tenant declined to exercise its right of first refusal pursuant to Section 10.02 below, as follows: Tenant shall be responsible for 20%, 40%, 60% and 80% of any such tax increases for the first, second, third and fourth years following the date of such sale or transfer, and shall be solely responsible in the fifth (5th) year and thereafter.

Section 4.02 Utility Expenses. During the Term of this Lease, Tenant shall pay any water or sewer charges imposed with respect to the Premises or any improvements thereon and Tenant shall pay all charges for sewer, water, electricity, gas or other services furnished to the Premises or the occupants thereof during the Term of this Lease.

Section 4.03 Refunds. Any refunds or rebates of amounts paid by Tenant pursuant to Sections 4.01 or 4.02 shall belong to Tenant, and Landlord shall aid Tenant in obtaining any such refund or rebate, provided that the cost of obtaining the same shall be paid by Tenant.

Section 4.04 Exceptions. Nothing in this Lease shall be construed to require Tenant to pay any inheritance, estate, transfer, successions, gift, income, franchise or profit taxes that are or may be imposed upon Landlord, its successors or assigns.

Section 4.05 Right to Contest. Tenant may, in its own name or in Landlord's name, take any action deferring payment of any amount due under this Article IV, or contest any tax or other charge for which Tenant is responsible hereunder. Landlord will execute any documents relating to any such action provided that Tenant shall protect, defend, indemnify and hold Landlord harmless from any liability therefore and that all expenses of any such action shall be borne by Tenant.

ARTICLE V CONDUCT OF BUSINESS BY TENANT

Section 5.01 Permitted Use. The Premises may be used only for the generation of electricity, steam or waste heat products and for any uses related or incidental thereto. Landlord shall not unreasonably withhold, condition or delay its consent to any change in use of the Premises to any other lawful use. If Tenant develops waste heat products on the Useable Premises, the improvements related thereto shall be located in part on the westerly 250 feet of the Useable Premises and, if Tenant is then permitted to sell such waste heat products to Landlord and Landlord's tenants, Landlord and Tenant shall enter into good faith negotiations to endeavor to agree on price and terms for such purchase and sale. Nothing in this Lease shall impose on Tenant any obligation to actually operate upon the Premises or otherwise conduct business of any nature thereon. Tenant may discontinue operation upon the Premises at any time or from time to time.

Section 5.02 Exclusive Control. Tenant shall have exclusive control, possession, occupancy, and management of the Premises, subject only to the Permitted Exceptions and restrictions self-imposed by Tenant.

Section 5.03 Compliance with Laws.

(a) During the Term, subject to the provisions of this Lease, Tenant covenants that Tenant will comply, or require its Subtenants (as defined below) to comply, at no cost or expense to Landlord, with all laws, ordinances, orders, rules, regulations and requirements of all federal, state and municipal governments and appropriate departments, commissions, boards and offices thereof, which may be applicable to Premises arising out of Tenant's or such Subtenant's use of the Premises or any improvements thereon.

(b) Tenant may, in its own name or in Landlord's name, contest or permit its Subtenants to contest by appropriate legal proceedings, without cost or expense to Landlord, the validity of any law, ordinance, order, rule, regulation or requirement of the nature referred to in subsection (a) above and to postpone compliance with the same, provided such contest shall be promptly and diligently prosecuted at no expense to Landlord and so long as Landlord shall not thereby suffer any civil liabilities or be subject to any criminal penalties or sanctions, and Tenant shall properly protect, defend and save harmless Landlord against any liability and claims for any such liability.

Section 5.04 Hazardous Materials.

(a) Tenant shall not introduce, release or discharge in, on or about the Premises any Hazardous Materials (as hereinafter defined); provided, however, that the foregoing covenant shall not limit or restrict Tenant's use, storage or generation of Hazardous Materials so long as such Hazardous Materials are those typically used in connection with electrical generating facilities. Any use, storage or generation of Hazardous Materials by Tenant in or about the Premises shall be carried out in compliance with all applicable Environmental Laws (as hereinafter defined). Tenant acknowledges that it has had, or will have, the opportunity to perform tests and studies of the Premises to determine whether the Premises has Hazardous Materials.

(b) If at any time during the Term, Tenant shall introduce, release or discharge in, on or about the Premises any Hazardous Material, Tenant shall, at its sole cost and expense, carryout and complete any repair, closure, detoxification, decontamination or other clean-up of the Premises from any Hazardous Material introduced, released or discharged by Tenant in, on or about the Premises. If Tenant fails to implement and diligently pursue any such repair, closure, detoxification, decontamination or other clean-up of the Premises, following ninety (90) days from Tenant's receipt of notice from Landlord that Tenant has failed to perform or diligently pursue its obligations under this subsection (b), Landlord shall have the right, but not the obligation, to terminate this Lease and carry out such action and to recover the cost and expenses so incurred by Landlord from Tenant.

(c) Except as provided in subsection (b) above, Landlord shall be solely responsible, both as to performance and payment of costs therefor, to carryout and complete any repair,

closure, detoxification, decontamination or other clean-up of the Premises as a result of any introduction, release or discharge by Landlord or any other party (other than Tenant) of Hazardous Materials in, on or about the Premises.

(d) As used herein, the term "Hazardous Materials" means, collectively, (i) those substances included within the definitions of or identified as "hazardous chemicals," "hazardous waste," "hazardous substances," "hazardous materials," "toxic substances," "extremely hazardous substances," "toxic pollutants," "contaminants," "pollutants" or similar terms in or pursuant to, without limitation, the Comprehensive Environmental Response Compensation and Liability Act of 1980 (42 U.S.C. 9601 et seq.) ("CERCLA"), as amended by Superfund Amendments and Reauthorization Act of 1986 (Pub. L. 99-499, 100 State, 1613), the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq.) ("RCRA"), the Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) ("OSHA"), and the Hazardous Materials Transportation Act, 49 U.S.C. § 1801 et seq. ("HMTA"), and in the regulations promulgated pursuant to such laws, all as amended, (ii) those substances listed in the United States Department of Transportation Table (49 CFR 172.101 and amendments thereto) or by the Environmental Protection Agency (or any successor agency) as hazardous substances (40 CFR part 302 and amendments thereto), (iii) any material, waste or substance which is or contains (A) petroleum, including crude oil or any fraction thereof, natural gas, or synthetic gas usable for fuel or any mixture thereof, (B) asbestos, (C) polychlorinated biphenyls, (D) designated as a "hazardous substance" pursuant to Section 311 of the Clean Water Act, 33 U.S.C. § 1251 et seq. (33 U.S.C. § 1321) or listed pursuant to Section 307 of the Clean Water Act (33 U.S.C. § 1317), (E) flammable explosives, (F) radioactive materials, and (iv) such other substances, materials and wastes which are or become regulated or classified as hazardous, toxic or as "special wastes" under any Environmental Laws. As used herein, "Environmental Laws" shall mean all applicable requirements of environmental, public or employee health and safety, public or community right-to-know, ecological or natural resource laws or regulations or controls, including all applicable requirements imposed by any law (including without limitation common law), rule, order, or regulations of any federal, state, or local executive, legislative, judicial, regulatory, or administrative agency, board, or authority, which relate to (i) pollution or protection of the air, surface water, groundwater, or soil, (ii) solid, gaseous, or liquid waste generation, treatment, storage, disposal or transportation, (iii) exposure to Hazardous Materials, or (iv) regulation of the manufacture, processing, distribution and commerce, use, or storage of Hazardous Materials.

ARTICLE VI IMPROVEMENTS AND ALTERATIONS AND REPAIRS AND MAINTENANCE OF PREMISES

Section 6.01 Improvements.

(a) General. Tenant may at its own cost construct any buildings or other improvements on the Premises, provided that they shall be in accordance with all applicable building regulations. Tenant may also make any changes or alterations to the Premises and Tenant may raze, remove or destroy any improvements or vegetation presently located on the Premises.

(b) Fence and Landscaping. Prior to the Commencement Date, Tenant shall propose to Landlord a plan for installation of a fence or other landscaping improvement which surrounds the exterior of the perimeter of the Premises (excluding any driveway, right-of-way or easement reasonably required for Tenant's access to and use of the Premises) and is designed to provide an aesthetic buffer between the Premises and Landlord's Adjoining Property (either improvement, the "Visual Fence"). Landlord shall have the right to review and approve Tenant's proposal, which approval shall not be unreasonably withheld, conditioned or delayed. Tenant shall install the Visual Fence within one (1) year after the Commencement Date. The Visual Fence shall conform to the height and other guidelines of the Otay Mesa Development District. Within one (1) year of the Commencement Date, Tenant shall install any other landscaping upon the Premises required to comply with the guidelines of the Otay Mesa Development District.

Section 6.02 Alterations by Tenant. Tenant shall have the right at any time and from time to time during the Term to make, at its sole cost and expense, such changes and alterations, structural or otherwise, in or to the improvements constructed upon the Premises as Tenant shall deem necessary or desirable, including, without limitation, the right to remove and/or demolish buildings and other improvements whether or not new buildings or other improvements are to be constructed in their place.

Section 6.03 Title to Improvements and Personal Property. Notwithstanding anything to the contrary in this Lease, all improvements, fixtures, equipment and other personal property at any time constructed or located in, on or at the Premises or otherwise affixed to the Premises shall at all times during the Term be exclusively owned by, and shall belong to, Tenant. All the benefits and burdens of ownership of the foregoing, including title, depreciation, tax credits, and all other items, shall be and remain in Tenant during the Term.

Section 6.04 Repairs and Maintenance. Any and all buildings, structures or improvements which may be constructed on the Premises pursuant to this Lease shall, during the Term of this Lease, be kept and maintained in good condition and repair by Tenant, at no cost or expense to Landlord, reasonable wear and tear and damage by casualty or condemnation excepted. In connection with the Visual Fence and landscaping provided for in Section 6.01 above, such improvements shall be maintained at Tenant's sole cost and expense, in a neat and attractive condition consistent with the surrounding properties.

ARTICLE VII INSURANCE AND SELF INSURE AND INDEMNITY

Section 7.01 Insurance. Tenant hereby covenants and agrees at all times during the Term of this Lease, to either self insure (subject to Section 7.02, below) or maintain commercial general liability insurance naming Tenant and Landlord, as an additional insured, as their interests may appear. Such commercial general liability policies, shall cover bodily injury and property damage to third parties and shall be maintained with limits of no less than \$2,000,000 per occurrence and in the aggregate, excess liability in the amount of \$5,000,000 per occurrence. During the Term, so long as an endorsement for "sudden and accidental" or comparable endorsement is available, such commercial general liability policies shall include such endorsement. Copies of certificates of such policies shall be delivered to Landlord within thirty

(30) days after Tenant's receipt of Landlord's written request for such information; provided, that Tenant shall not be required to respond to such requests more often than once a year.

Section 7.02 Self Insure. Notwithstanding anything to the contrary in Section 7.01 above, upon the written consent of Landlord, exercised in Landlord's sole and absolute discretion, Tenant may self insure any or all of the coverages required to be maintained by Tenant pursuant to this Lease. In the event that Landlord consents, Tenant shall furnish to Landlord a certificate of self-insurance identifying the coverages so self-insured.

Section 7.03 Waiver of Subrogation. Landlord and Tenant each hereby waives any and all rights of recovery against the other, and against the officers, employees, agents, representatives, customers and business visitors of such other party, for loss of or damage to such waiving party or its property or the property of others under its control, arising from any cause insured against under any policy of insurance carried by such waiving party at the time of such loss or damage, to the extent of insurance proceeds actually received. Landlord and Tenant shall, upon obtaining the policies of insurance which they maintain in connection with this Lease, give notice to their respective insurance carrier or carriers that the foregoing mutual waiver of subrogation is contained in this Lease.

Section 7.04 Indemnities.

(a) To the fullest extent permitted by law, Tenant shall indemnify, protect, defend and hold Landlord harmless from and against any liability or expense (including but not limited to reasonable attorneys' fees and costs of defense) for any damage or injury to persons or property in or about the Premises or any improvements thereon which may result from the use or occupation of the Premises or any improvements thereon by or the breach of the provisions of this Lease by Tenant. Provided, however, that the foregoing shall not extend to any damage or injury to the extent caused by the negligence or willful misconduct of Landlord, its agents, employees, contractors or invitees or for which Landlord is obligated to indemnify Tenant pursuant to subsection (b) below.

(b) To the fullest extent permitted by law, Landlord shall indemnify, protect, defend and hold Tenant harmless from and against any liability or expense (including but not limited to reasonable attorneys' fees and costs of defense) for any damage or injury to persons or property in or about the Premises or the improvements thereon which may result from (i) the negligence or willful misconduct of Landlord or its employees, agents or contractors or the breach of the provisions of this Lease (including any of Landlord's representations, warranties or covenants) by Landlord or (ii) the use or occupation or exercise of any rights by Landlord or any other party claiming by, through or under Landlord with respect to the Remainder Premises. Provided, however, that the foregoing shall not extend to any damage or injury to the extent caused by the negligence or willful misconduct of Tenant, its agents, employees, contractors or invitees or for which Tenant is obligated to indemnify Landlord pursuant to subsection (a) above.

ARTICLE VIII
ASSIGNMENT AND SUBLETTING

Section 8.01 Tenant's Right to Assign or Transfer. Tenant may assign or otherwise transfer all or any part(s) of this Lease or leasehold estate hereunder without Landlord's consent. Any assignee of Tenant shall assume all obligations and liabilities of Tenant under this Lease. Tenant shall promptly notify Tenant of any such assignment or transfer. No such assignment shall release Tenant from any obligation or liability under this Lease, unless Landlord consents in writing to such release. If Tenant assigns this Lease, then as between Landlord and Tenant, Tenant shall be deemed to have assigned to the assignee or transferee all claims against Landlord then existing, together with all liabilities and obligations of Tenant then existing or thereafter arising under this Lease (except as otherwise expressly provided in this Lease).

Section 8.02 Tenant's Right to Sublet. As used herein, a "Sublease" means any sublease of the Premises or any part of the Premises, or any other agreement or arrangement (including a license agreement or concession agreement) made by Tenant granting any third party the right to occupy, use or possess any portion of the Premises, together with any subleases or any further level of subletting of the Premises or any part of the Premises, as any of the foregoing may be assigned, extended, renewed, or amended from time to time. Tenant may enter into or modify any Sublease, terminate any Sublease or evict any subtenant or occupant under a Sublease (a "Subtenant"), and grant any consent or waiver under Sublease, all without Landlord's consent. If Tenant enters into any Sublease, then such Sublease shall be subordinate to this Lease. No Sublease shall affect or reduce any obligations of Tenant or rights of Landlord under this Lease. All obligations of Tenant under this Lease shall continue in full force and effect notwithstanding any Sublease. Tenant shall upon request (no more frequently than once every twelve months) provide Landlord with a current list, and copies, of all Subleases. Tenant hereby assigns, transfers and sets over to Landlord all of Tenant's right, title, and interest in and to every Sublease entered into by Tenant from time to time, together with all subrents or other sums of money due and payable under such Sublease, and all security deposited with Tenant under such Sublease. Such assignment shall, however, become effective and operative only if this Lease shall expire or be terminated or cancelled, or if Landlord re-enters or takes possession of the Premises pursuant to this Lease.

Section 8.03 Subtenant Nondisturbance. Landlord shall, upon Tenant's request made at any time or from time to time, enter into a subordination, nondisturbance and attornment agreement ("SNDA") with any Subtenant, provided that: (a) such Subtenant's Sublease is commercially reasonable; (b) Tenant provides Landlord with a copy of such Sublease; (c) such Subtenant's Sublease does not grant any rights to the Subtenant that the Tenant would not have following the expiration or termination of this Lease (i.e., the term of the Sublease does not extend beyond the Term of this Lease) ; and (d) Tenant is not in default under this Lease (i.e., after any applicable notice and cure period). If Landlord fails to execute and return to Tenant any such SNDA within ten (10) business days after Landlord's receipt of the same, then Landlord shall indemnify Tenant for such failure by Landlord pursuant to Section 7.04(b) above.

ARTICLE IX
HYPOTHECATION AND DISPOSITION OF
LEASEHOLD ESTATE IN THE PREMISES

Section 9.01 Hypothecation. Tenant may, from time to time, without obtaining the consent of Landlord, hypothecate, mortgage, pledge or alienate Tenant's leasehold estate and rights hereunder as security for payment of any indebtedness and/or the performance of any obligation. The holder of any such lien upon the leasehold estate of Tenant under this Lease, or any replacement thereof, is herein referred to as "mortgagee." A mortgagee may enforce such lien and acquire title to the leasehold estate in any lawful way and, pending foreclosure of such lien, the mortgagee may take possession of and operate upon the Premises performing all obligations performable by Tenant, and upon foreclosure of such lien by power of sale, judicial foreclosure, or upon acquisition of the leasehold estate by deed in lieu of foreclosure, the mortgagee may, without further consent of Landlord, sell and assign the leasehold estate hereby created. Any person or entity acquiring such leasehold estate so sold and assigned by the mortgagee shall be liable to perform the obligations imposed on Tenant by this Lease only during the period such person has ownership of said leasehold estate or possession of the Premises subject thereto. The term "mortgagee" shall be deemed to include without limitation the holder of any purchase money mortgage or deed of trust, including any so-called "all-inclusive deed of trust" delivered in connection with an assignment of Tenant's leasehold estate or in connection with a sale and leaseback as permitted in Section 9.05 below, and any such mortgagee shall be entitled to the benefits of all of the provisions of this Lease in favor of a mortgagee. The rights and privileges hereunder of any mortgagee shall be subject to the rights and privileges of any other mortgagee whose lien has priority over the lien of such mortgagee.

Section 9.02 Notice to and Rights of Mortgagee.

(a) When giving notice to Tenant with respect to any default hereunder, Landlord shall also serve a copy of each such notice upon each mortgagee who shall have given Landlord a written notice specifying its name and address. In the event Tenant shall default in the performance of any of the terms, covenants, agreements and conditions of this Lease on Tenant's part to be performed, any mortgagee shall have the right, within the grace period available to Tenant for curing such default, to cure or make good such default or to cause the same to be cured or made good whether the same consists of the failure to pay rent or the failure to perform any other matter or thing, and Landlord shall accept such performances on the part of any such mortgagee as though the same had been done or performed by Tenant. In the case of a default by Tenant in the payment of money, Landlord will take no action to effect a termination of this Lease by reason thereof unless such default has continued beyond sixty (60) days after Landlord shall have served a copy of such notice upon such mortgagee, it being the intent hereof and the understanding of the parties that any such mortgagee entitled to such notice shall be allowed up to but not in excess of sixty (60) days after the service of such notice to cure any default of Tenant in the payment of rent or in the making of any other monetary payment required under the terms of this Lease. In the case of any other default by Tenant, Landlord will take no action to effect a termination of the Term of this Lease by reason thereof unless such default has continued beyond the grace period available to Tenant for curing said default, and then only after Landlord shall have given to each such mortgagee a reasonable time after the expiration of

Tenant's grace period for curing such default within which either (i) to cure such default, if such default is susceptible of being cured by mortgagee without the mortgagee obtaining possession of the Premises, or (ii) to obtain possession of the Premises (including possession by a receiver) and to cure such default, in the case of a default which is susceptible of being cured by the mortgagee only when the mortgagee has obtained possession thereof, or (iii) to institute foreclosure proceedings and to complete such foreclosure proceedings or otherwise acquire Tenant's interest under this Lease with reasonable and continuous diligence in the case of a default which is not susceptible of being cured by any such mortgagee; provided, however, that any such mortgagee shall not be required to continue such possession or continue such foreclosure proceedings if the default which prompted the service of such a notice has been cured.

(b) The time available to any mortgagee entitled to notice to initiate foreclosure proceedings as aforesaid shall be deemed extended by the number of days of delay occasioned by other circumstances beyond the mortgagee's control. During the period that such mortgagee shall be in possession of the Premises and/or during the pendency of any foreclosure proceedings instituted by any mortgagee, the mortgagee shall pay or cause to be paid the rent specified in Article III above and all other charges of whatsoever nature payable by Tenant hereunder which have been accrued and are unpaid and which will thereafter accrue during said period. Following the acquisition of Tenant's leasehold estate by the mortgagee, or its designee, either as a result of judicial foreclosure or trustee sale proceedings or acceptance of an assignment in lieu of foreclosure, the mortgagee or party acquiring title to Tenant's leasehold estate shall, as promptly as possible, and in any event within thirty (30) days, commence the cure of all defaults hereunder to be cured and thereafter diligently process such cure to completion, except such defaults and covenants which cannot, in the exercise of reasonable diligence, be cured or performed by the mortgagee or party acquiring title to Tenant's leasehold estate, whereupon Landlord's right to effect a termination of this Lease based upon the default in question shall be deemed waived. Any default not susceptible of being cured by the mortgagee or party acquiring title to Tenant's leasehold estate shall be, and shall be deemed to have been, waived by Landlord as to such party acquiring Tenant's interest in this Lease upon completion of the foregoing proceedings or acquisition of Tenant's interest in this Lease by any purchaser (who may, but need not be, any mortgagee) at the foreclosure or trustee's sale, or who otherwise acquires such Tenant's interest by virtue of the mortgagee's exercise of its remedies. Any such purchaser, including, without limitation, any mortgagee, shall be liable to perform the obligations imposed on Tenant by this Lease incurred or accrued only during the period such person has ownership of said leasehold estate or possession of the Premises. Nothing herein shall preclude Landlord from exercising any of Landlord's rights or remedies with respect to any other default by Tenant during any period of any such forbearance subject to the rights of the mortgagee as herein provided. All notices by Landlord to any mortgagee shall be given in the manner proscribed by Section 15.05 below for notices, addressed to the mortgagee at the address last specified in writing to Landlord by the mortgagee.

Section 9.03 New Lease. In the event that this Lease is terminated for any reason, including, without limitation, any termination or rejection through bankruptcy or chapter proceedings, any mortgagee holding a lien that is a first and senior lien upon the leasehold estate of Tenant shall have the right, within sixty (60) days of receipt of notice of such termination, to demand a new lease to replace this Lease covering the Premises for a term to commence on the date of

procurement by Landlord of possession of the Premises and to expire on the same date as this Lease would have expired if it had otherwise continued uninterrupted until its scheduled date of termination, and containing all of the same rights, terms, unexpired options, covenants, considerations and obligations as set forth in this Lease. Such new lease shall be executed and delivered by Landlord to such mortgagee within sixty (60) days after receipt by Landlord of written notice from the mortgagee of such election and upon payment by such mortgagee of all sums owing by Tenant under the provisions of this Lease (less the rent and other income actually collected by Landlord in the meantime from any Subtenants) and upon performance by the mortgagee of all other obligations of Tenant under the provisions of this Lease with respect to which performance is then due and which are susceptible of being cured by the mortgagee. After such termination and cancellation of this Lease and prior to the expiration of the period within which any such mortgagee may elect to obtain such new lease from Landlord, Landlord shall refrain from terminating any existing Sublease and from executing any new Subleases or otherwise encumbering the real property demised hereby without the prior written consent of any such mortgagee and Landlord shall account to such mortgagee for all rent collected from Subtenants during such period. Any new lease granted any such mortgagee shall enjoy the same priority in time and in right as this Lease over any lien, encumbrance or other interest created by Landlord before or after the date of such new lease and shall have the benefit of and vest in such mortgagee all right, title, interest, power and privileges of Tenant hereunder in and to the Premises, including specifically, without written limitation, the assignment of Tenant's interest in and to all then existing Subleases and Sublease rentals and the automatic vesting of title to all buildings, improvements and appurtenances, as well as to all equipment, fixtures and machinery therein until the expiration or termination of the Term thereof. Such new lease shall provide, with respect to each and every Sublease which immediately prior to the termination of the Term of this Lease was superior to the lien of the mortgagee executing the new lease as tenant, or as to which such mortgagee has executed a nondisturbance agreement, that such tenant thereunder shall be deemed to have recognized the Subtenant under the Sublease, pursuant to the terms of the Sublease, as modified by any applicable nondisturbance or attornment agreement, as though the Sublease had never terminated but had continued in full force and effect after the termination of the term of this Lease, and to have assumed all of the obligations of the sublessor under the Sublease accruing from and after the termination of the term of this Lease, except that the obligation of the new tenant, as sublessor, under any covenant of quiet enjoyment, express or implied, contained in any such Sublease, shall be limited to the acts of such tenant and those claiming by, under and through such tenant.

Section 9.04 Consent of Mortgagee. Without the prior consent of any mortgagee and except as otherwise permitted herein, neither this Lease nor the leasehold estate created by this Lease shall be surrendered, cancelled, or amended (except with respect to termination pursuant to any eminent domain proceedings concerning a total taking or a casualty as provided in Article XI below) and no agreement purporting to surrender, cancel, terminate, or amend this Lease without the consent of any mortgagee entitled to receive notice of default under this Article IX shall be valid or effective. In order to facilitate any financing or refinancing by Tenant which involves the hypothecation of Tenant's leasehold estate and rights hereunder, Landlord, if requested so to do by Tenant, agrees to join in executing any and all instruments which legal counsel for any lender which is or may become a mortgagee and the holder of a lien that is a first lien and charge upon the leasehold estate of Tenant may reasonably require in order: (i) to grant to the

mortgagee or prospective mortgagee the right to act for Tenant in enforcing or exercising any of Tenant's rights, options or remedies under this Lease; (ii) to amend the provisions of this Lease which relate to the application of Tenant's portion of any insurance proceeds or condemnation award as may reasonably be requested by any mortgagee; and (iii) to otherwise amend or supplement this Lease, provided that in no event shall Landlord be required to incur any personal liability for the repayment of any obligations secured by any such hypothecation of the leasehold estate of Tenant nor to subordinate Landlord's rights and reversionary interests in and to the Premises to any such hypothecation nor shall any such amendment or supplement to this Lease adversely affect Landlord's rental, Tenant's payment of taxes, assessments, insurance and/or Tenant's payment of other obligations under this Lease, extend or otherwise modify the Term of this Lease or otherwise diminish or reduce Landlord's rights under this Lease (including, without limitation, Landlord's rights under this Article IX) except in a manner which is reasonable and which is not material to Landlord's interests. Landlord agrees to cause the holder of any deed of trust or mortgage encumbering Landlord's reversionary interests in and to the Premises, or any portion thereof, to subordinate the lien or charge of its deed of trust or mortgage to any such instrument, amendment and/or supplement executed by Landlord in order to comply with Landlord's obligations under this Section, if such subordination is requested by any lender of Tenant's which is or may become a mortgagee.

Section 9.05 Sale and Leaseback. Notwithstanding anything to the contrary herein contained, should Tenant assign its leasehold estate hereunder in connection with a sale and leaseback of the leasehold estate created by this Lease and simultaneously become vested with a subleasehold estate or similar possessory interest in the Premises by virtue of a sublease made by the assignee, or should Tenant convey its leasehold estate by way of a leasehold deed of trust or mortgage and retain its possessory interest in the Premises, then in neither of such events (i) shall the prior written consent of Landlord be required, nor (ii) shall the assignee of this Lease under any such sale and leaseback or the trustee, beneficiary or mortgagee under any such deed of trust or mortgage be deemed to have assumed or agreed to be bound by any of Tenant's obligations hereunder and such obligations shall continue to remain those of Tenant alone so long as Tenant shall retain its possessory interest, and performance by Tenant of any act required to be performed under this Lease by it or fulfillment of any condition of this Lease by Tenant shall be deemed the performance of such act or the fulfillment of such condition by such assignee, trustee, beneficiary or mortgagee, as the case may be, and shall be acceptable to Landlord with the same force and effect as if performed or fulfilled by such assignee, trustee, beneficiary or mortgagee.

Section 9.06 No Merger. No merger of Tenant's leasehold estate into Landlord's fee title shall result or be deemed to result by reason of ownership of Landlord's or Tenant's estates by the same party or by reason of any other circumstances, without the prior consent of any and all mortgagees; provided that this provision shall not be deemed applicable to a termination of Tenant's leasehold estate by reason of Tenant's default or otherwise.

ARTICLE X TRANSFERS BY LANDLORD; RIGHT OF FIRST REFUSAL

Section 10.01 Transfer of Landlord's Interest. In the event of any sale of the Premises by Landlord, Landlord shall be and is hereby entirely freed and relieved of all liability under any

and all of its covenants and unaccrued obligations contained in or derived from this Lease arising out of any act, occurrence or omission occurring after the consummation of such sale, provided that the purchaser at such sale or any subsequent sale of the Premises, covenants in writing to and with Tenant to carry out any and all of the covenants and obligations of Landlord under this Lease and provided further that no such assignment shall release the initial party executing this Lease, as Landlord, from Landlord's representations, warranties and covenants pursuant to Section 17.01 below.

Section 10.02 Right of First Refusal. If at any time during the Term of this Lease, Landlord or its affiliate shall elect to sell (a) the Premises (if the Map Approval obtained pursuant to the terms of this Lease permits the sale of the Useable Premises, as opposed merely to the lease and financing of the Premises, in compliance with the Map Act), or (b) the legal parcel of which the Useable Premises are a part (if the Map Approval obtained pursuant to the terms of this Lease does not permit the sale of the Premises in compliance with the Map Act) to a party other than an affiliate of Landlord, Tenant, or its assigns, are hereby given the right of first refusal to purchase the same in accordance with the procedures hereinafter set forth. For purposes of this Section 10.02, an "affiliate" shall mean a person or entity which is controlled by or under common control with Landlord (including without limitation, Charles Feurzeig, Robert Teel and any legal entity in which either Charles Feurzeig or Robert Teel controls at least twenty percent (20%) of either the voting or equity interest of such entity). If Landlord or its affiliate shall secure a firm offer in contract form executed by any purchaser, said offer shall be submitted to Tenant, or its successors or assigns, in writing, and the latter shall have twenty (20) days from the date of receipt of said notice in which to meet the terms of said purchase as set forth in said contract. If Tenant shall not have notified Landlord in writing of its election to purchase either the Premises or the parcel on which the Premises is contained within such twenty (20) day period, or in the further event Tenant shall fail to comply with the terms of said offer to purchase within the periods therein provided, then Landlord shall have the right to sell the applicable property upon the substantially the same terms and conditions as set forth in said notice to the purchaser designated therein. If Landlord or its affiliate shall not forthwith thereafter consummate said sale, then the first right of refusal shall continue in full force and effect with respect to any future contemplated sales or if such sale be consummated, said first right of refusal shall continue in full force and effect with respect to any subsequent sales contemplated by the new owners, and the same notice requirements shall apply. If Tenant, or it assigns, shall elect to purchase upon the terms contained in said notice, then Landlord or its affiliate shall consummate said purchase in accordance with the terms contained in said notice (except that in the event that the terms of the proposed purchase include financing, Tenant shall pay the total purchase price in cash). Any purchaser (or direct or indirect subsequent purchaser) of the fee estate or any interest in the fee estate or any equity interest in Landlord shall be bound, as to subsequent transfers, by Tenant's right of first refusal as provided in this Section 10.02, whether or not the instrument(s) of transfer to such purchaser so state. In connection with any purchase and sale of the Premises by Tenant, Tenant shall also be granted a permanent interest in the Easements.

Section 10.03 Option to Purchase. Landlord hereby grants to Tenant the Option to purchase the Useable Premises (the "Option"), at a purchase price of Two Million Four Hundred Thirty Seven Thousand Five Hundred Dollars (\$2,437,500) (the "Purchase Price"). Tenant may exercise such option by written notice to Landlord at any time prior to the thirtieth (30th) day following the date

on which Tenant receives notice that the Useable Premises constitute a separate legal lot pursuant to the Map Act. Upon exercise of the option Tenant and Landlord shall in good faith negotiate a purchase and sale agreement. The purchase and sale agreement shall provide for (1) an escrow closing, (2) that the Useable Premises shall be purchased "AS IS" and Landlord shall only be required to give those representations, warranties and covenants set forth in Section 17.01, as applicable, and other customary representation, warranties and covenants relating to Landlord and Landlord's use of the Useable Premises, and (3) the proration of monthly Base Rent for the period ending on or before the closing date. If the parties fail to negotiate the purchase and sale agreement within ninety (90) days of Tenant's exercise of the Option, the parties shall request the AAA to appoint an independent mediator to draft the purchase and sale agreement along standard industry terms. At the closing, Landlord shall deliver to the escrow agent an appropriate deed conveying to Tenant the entire interest of Landlord to the Useable Premises free and clear of all encumbrances other than the Permitted Exceptions, and those encumbrances that Tenant has created against the Useable Premises. In connection with any purchase and sale of the Useable Premises by Tenant, Tenant shall also be granted a permanent interest in the Easements.

ARTICLE XIDAMAGE AND CONDEMNATION

Section 11.01 Damage or Destruction.

If during the Term of this Lease, the Premises or any improvements thereon (including the power generation equipment thereon) shall be damaged by fire, flood, tornado, by the elements, or otherwise, Tenant may, at Tenant's expense repair said damage and restore the Premises to their previous or like condition or raze such improvements.

Section 11.02 Condemnation.

(a) Definition of Terms.

(i) The term "total taking" as used in this Section means the taking of the entire Premises under the power of eminent domain or the taking of so much thereof as will in Tenant's judgment prevent or substantially impair the use of the Premises for the uses and purposes then being made or proposed to be made by Tenant, of the Premises.

(ii) The term "partial taking" means the taking of a portion only of the Premises which does not constitute a total taking as defined in clause (i) above.

(iii) The term "taking" shall include a voluntary conveyance by Landlord to an agency, authority or public utility under threat of a taking under the power of eminent domain in lieu of formal proceedings.

(iv) The term "date of taking" shall be the date upon which title to the property or portion thereof passes and vests in the condemnor or the date of entry of an order for immediate possession by a court of competent jurisdiction in connection with any judicial proceedings in eminent domain or the date physical possession of the property is taken or interfered with, whichever first occurs.

(v) The term "leased land" means the real property belonging to Landlord and demised hereby, but exclusive of any and all improvements situated upon the Premises at the commencement of the Term of this Lease and also exclusive of all improvements constructed or placed thereon by or under Tenant and exclusive of any grading and other site work performed by or under Tenant.

(b) Effect of Taking. If during the Term of this Lease there shall be a total or partial taking under the power of eminent domain, then the leasehold estate of Tenant in and to the Premises, in the event of a total taking, or the portion thereof taken, in the event of a partial taking, shall cease and terminate, as of the date of taking thereof. If this Lease is so terminated in whole or in part, all rentals and other charges payable by Tenant to Landlord hereunder and attributable to the Premises, or portion thereof taken, shall be paid by Tenant up to and prorated through the date of taking by the condemnor, and the parties shall thereupon be released from all further liability in relation thereto.

(c) Allocation of Award. The proceeds of any total or partial taking award shall be divided between Landlord and Tenant in accordance with the applicable laws of the state California and as their respective interest may appear, which shall include, but not be limited to, the award of an amount equal to the unamortized cost of all of Tenant's improvements to the Premises, the unamortized cost of its leasehold improvements and fixtures, relocation, severance and moving costs, loss of business and goodwill, Tenant's leasehold value, and replacement costs related to such act(s) of condemnation.

(d) Reduction of Rent on Partial Taking. In the event of a partial taking, the Base Rent (and Special Additional Rent, if any) payable by Tenant pursuant to this Lease shall be proportionately adjusted from the date of taking to the date of expiration of the Term of this Lease by multiplying the Base Rent (and Special Additional Rent, if any) payable pursuant to the terms of the Lease (as if no taking had occurred) by a fraction, the numerator of which is the square footage of the Premises which was not taken and the denominator of which is the total square footage of the Premises.

(e) Rights of Mortgagees. In the event at the time of the taking the leasehold estate of Tenant is mortgaged as security to any mortgagee, any award or portion thereof to which Tenant is entitled shall be subject to the prior claim of such mortgagee.

ARTICLE XII DEFAULTS AND REMEDIES

Section 12.01 Defaults by Tenant. If Tenant shall be in default with respect to any obligations, covenants or agreements to be performed by Tenant as set forth herein, and if such default is not cured by Tenant within twenty (20) days after Landlord has specifically notified Tenant in writing of such default (excepting therefrom the event when Tenant may be in default but has undertaken to cure the default and thereafter diligently pursues the cure to completion), Landlord may (exclusive of any rights of forfeiture) exercise any right or remedy provided by this Lease, law or equity, including, but not limited to, the right of specific performance; provided, that Landlord shall not have the right to seek or obtain Tenant's specific performance of obligations which Tenant has the right under this Lease to avoid, such as Tenant's right to terminate and not

consummate this Lease as set forth in Section 16.03 below.

Section 12.02 Default by Landlord. Should Landlord default in the payment of any obligation under any mortgage, trust deed, judgment, assessment, tax or other encumbrance affecting the Premises, or fail to perform any obligation specified under this Lease, Tenant shall have the right, but shall not be obligated, to pay or discharge any such obligation. Should Tenant elect to pay or discharge any such obligation, Landlord shall, within ten (10) calendar days from the date of Tenant's written demand, reimburse Tenant in the full amount thereof together with Tenant's expenses incurred in connection therewith, including but not limited to, reasonable attorney's fees and interest at the Interest Rate, from the date of Tenant's disbursement. In the event Landlord fails to reimburse the monies and costs expended and accrued for and against Tenant, Tenant shall have the right to deduct from rent(s) thereafter due and payable under this Lease all amounts that have been so paid by, or accruing for, Tenant. Notwithstanding anything set forth within this Lease, in the event of Landlord's default including, without limitation, a default as specified above or a default with respect to any other obligation, covenant, agreement, representation or warranty Tenant shall be entitled to pursue any and all remedies available to it at law or equity, including, but not limited to, the right of specific performance.

Section 12.03 Nonrecourse to Landlord. Notwithstanding anything to the contrary in this Lease, the liability under this Lease of Landlord (including its successors or assigns), for damages or otherwise, shall be enforceable against, and shall not extend beyond its interest in the Premises. No property or assets whatsoever, other than Landlord's interest in the Premises, shall be subject to levy, execution or any other enforcement procedure for the satisfaction of any remedies (monetary or otherwise) of Tenant arising under or in connection with this Lease. The limitation of liability and limitation of remedy provided for in this Section shall not apply in any way to, and shall not be construed to limit or preclude, personal liability (if any) arising under any supplementary agreement.

Section 12.04 Liability of Tenant. Landlord's sole recourse hereunder shall be against Tenant and Tenant's assets, except to the extent Tenant has Subleased or assigned its interest hereunder, in which case Landlord's recourse shall include any such successor and its assets. Except as provided in the sentence above, Landlord shall not have any recourse against any partners, members or affiliates of Tenant, nor shall Landlord make any claim against any such partners, members or affiliates of Tenant. This Section 12.04 is expressly for the benefit of the partners, members and affiliates of Tenant and shall survive the termination or expiration of this Lease. The limitation of liability and limitation of remedy provided for in this Section 12.04 shall not apply in any way to, and shall not be construed to limit or preclude, personal liability (if any) arising under any supplementary agreement.

Section 12.05 Expense of Litigation. If either party incurs any expense, including reasonable attorneys' fees, in connection with any action or proceeding instituted by either party by reason of any default or alleged default of the other party hereunder, the party prevailing in such action or proceeding shall be entitled to recover its said reasonable expenses from the other party. For purposes of this provision, in any unlawful detainer or other action or proceeding instituted by Landlord based upon any default or alleged default by Tenant hereunder, Landlord shall be deemed the prevailing party only if judgment is entered in favor of Landlord or if Tenant surrenders possession prior to the entry of any such judgment.

ARTICLE XIII HOLDING OVER

Section 13.01 Holding Over. Subject to Section 2.06, if Tenant or anyone claiming under Tenant shall remain in possession of the Premises or any part thereof after expiration of the Term of this Lease or any earlier termination of this Lease without an agreement in writing between Landlord and Tenant with respect thereto, Tenant shall occupy upon all of the terms and conditions of this Lease except that the monthly Base Rent due from Tenant shall be equal to: (i) one hundred ten percent (110%) of the monthly Base Rent in effect at the end of the Term of this Lease for the first thirty (30) days following the end of the Term, (ii) one hundred twenty-five percent (125%) of the monthly Base Rent in effect at the end of the Term for the next thirty (30) days after the end of the Term; and (iii) one hundred fifty percent (150%) of the monthly Base Rent in effect at the end of the Term for the balance of the period of any holding over by Tenant. Landlord's acceptance of rent shall create only a month-to-month tenancy, in either case upon the terms set forth in this Section. Any such month-to-month tenancy shall be terminable at the end of any calendar month by either party by written notice to the other party given not less than thirty (30) days prior to the end of such month. Nothing contained in this Section shall be deemed or construed to waive Landlord's right of re-entry or any other right of Landlord hereunder or at law.

ARTICLE XIV RECORDING, LIENS AND MORTGAGES

Section 14.01 Recording. Concurrently with their execution of this Lease, Landlord and Tenant shall execute and acknowledge a short form memorandum of lease in the form attached hereto as Exhibit "D". The parties shall upon the occurrence of the Commencement Date or the termination of this Lease, pursuant to Section 16.03, execute an amendment to the short form memorandum setting forth the Commencement Date (and any change in the legal description of the Premises created by the Map Approval) or acknowledging that this Lease has terminated. Tenant shall have both the original short form memorandum and the amendment thereto recorded and, upon recordation, shall furnish to Landlord a copy of each bearing the stamp of the San Diego County Recorder. Under no circumstances shall either party have this Lease recorded in such office.

Section 14.02 Liens. Each of Landlord and Tenant covenant with the other that each party ordering labor or materials for use on or about the Premises or property adjacent thereto will indemnify, protect, defend and hold harmless the other against any loss or damage due to any lien filed against the Premises, if any, as the case may be, on account of non-payment or dispute with respect to labor or materials furnished in connection with the work on or about the Premises or any adjacent property and such party shall cause no judgment to lie against the Premises or any such adjacent property. The party against whom such lien is filed shall notify the other within fifteen (15) days of its notice of filing and said lien shall be removed within twenty (20) days thereafter or protected by bond or surety should such party so affected desire to contest such lien.

Section 14.03 Fee Mortgages.

(a) As used herein, the term "Fee Mortgage" shall mean any mortgage, deed of trust, deed to secure debt, assignment, security interest, pledge, financing statement or any other instrument(s) or agreement(s) intended to grant security for any obligation encumbering the fee estate in the Premises (or portion thereof) as entered into, renewed, modified, amended, extended or assigned from time to time.

(b) Prior to any portion of the Premises or the Easements being made subject to a Fee Mortgage, Landlord shall, at its sole cost and expense, obtain from the said holder an agreement (hereinafter referred to as "Non-Disturbance Agreement"), in recordable form and in a form and content reasonably satisfactory to Tenant, providing that said holder shall recognize all of Tenant's rights, benefits and privileges provided in this Lease, and also covenanting that so long as Tenant is not in default hereunder (i.e. beyond any applicable notice and cure period), Tenant's possession and use of the Premises and the exercise of its rights hereunder (including without limitation the Easements) shall not be disturbed. Landlord shall deliver to Tenant such Non-Disturbance Agreement contemporaneously with the execution of this Lease as to all existing Fee Mortgages, and prior to Tenant's obligation to execute any documents related to a Non-Disturbance Agreement as to any future Fee Mortgages to be placed on the Premises or the Easements by Landlord.

(c) Provided that Tenant shall have previously received a Non-Disturbance Agreement from the requesting party or entity, at the written request of Landlord or the Fee Mortgage holder (and receipt of the same by Tenant) Tenant shall execute and deliver in recordable form a subordination agreement subordinating Tenant's leasehold estate, the rights of any mortgagee of the leasehold estate and all of Tenant's and any mortgagee's rights hereunder to the Fee Mortgage, as long as such document does not modify or change the terms and conditions of this Lease. For purposes of the foregoing, the parties have agreed that any Non-Disturbance Agreement and any subordination agreement by Tenant may be combined into one document.

(d) Any and all Fee Mortgage holders shall:

(i) take title subject to Tenant's rights to acquire the Premises pursuant to Sections 10.02 and 10.03 above;

(ii) agree to give Tenant the same notice, if any, given to Landlord of any default or acceleration of any obligation underlying any such Fee Mortgage or any sale in foreclosure under such Fee Mortgage;

(iii) agree to permit Tenant to cure any such default on Landlord's behalf within any applicable cure period, and Tenant shall be reimbursed by Landlord for any and all costs incurred in effecting such cure, including without limitation out-of-pocket costs incurred to effect any such cure (including reasonable attorneys' fees); and

(iv) agree to permit Tenant to appear by its representative and to bid at any sale in foreclosure made with respect to any such Fee Mortgage.

(e) Landlord shall promptly notify Tenant in writing of any default under any Fee Mortgage. Landlord shall provide Tenant with such documentation as Tenant shall reasonably request from time to time (such as monthly statements) to evidence and confirm that each Fee Mortgage is not in default.

ARTICLE XV MISCELLANEOUS

Section 15.01 Landlord's Right of Access. Landlord and its agents shall have the right to enter the Premises upon reasonable notice to Tenant during regular business hours, and in accordance with Tenant's reasonable instructions, solely to (a) ascertain whether Tenant is complying with this Lease; (b) cure Tenant's defaults of which Landlord shall have given Tenant prior notice and opportunity to cure pursuant to Section 12.01 above; or (c) exhibit the Premises in contemplation of a transfer in compliance with this Lease. In entering the Premises pursuant to this Article, Landlord and its agents shall not unreasonably interfere with the conduct of the operations on the Premises and shall comply with Tenant's reasonable instructions. Landlord shall indemnify, defend and hold harmless Tenant against any claims arising from Landlord's entry upon the Premises pursuant to this Section or any other provision of this Lease permitting Landlord to enter the Premises (except upon termination of this Lease).

Section 15.02 Severability. Any provision of this Lease which shall prove to be invalid, void or illegal shall in no way affect, impair or invalidate any other provision hereof, and such remaining provisions shall remain in full force and effect.

Section 15.03 Headings. The Article and Section captions contained in this Lease are for convenience only and shall not be considered in the construction and interpretation of any provision hereof.

Section 15.04 Incorporation of Prior Agreements; Amendments. This Lease and the exhibits hereto contain all of the agreements of the parties hereto with respect to any matter covered or mentioned in this Lease, and all preliminary negotiations, agreements or understandings pertaining to any such matter shall not be effective for any purpose. No provision of this Lease may be amended or added to except by an agreement in writing signed by the parties hereto or their respective successors in interest.

Section 15.05 Notices. Any notice, consent or approval (collectively, "notice") required or permitted to be given hereunder shall be in writing and may be served personally or by mail; if served by mail it shall be addressed to Landlord or Tenant, as the case may be, at the address of such party shown below:

Tenant: CIF Holdings, L.P.
c/o Robert Houck
6363 El Cajon Blvd., Suite 206
San Diego, CA 92115
Facsimile: (619) 583-0093

With a copy to: Duckor Spradling & Metzger
401 West A Street, Suite 2400
San Diego, CA 92101
Attention: Kevin M. Bagley, Esq.
Facsimile: (619) 231-6629

Tenant: CALPEAK POWER, LLC
701 "B" Street, Suite 340
San Diego, CA 92101
Attn: Charles Hinckley
Facsimile: (619) 239-1307

With copies to: Latham & Watkins
505 Montgomery Street, Suite 1900
San Francisco, CA 94111
Attn: Kenneth Whiting
Facsimile: (415) 395-8095

Any notice which is personally served shall be effective upon service; any notice given by mail shall be deemed effectively given, if deposited in the United States mail, registered or certified with return receipt requested, postage prepaid and addressed as specified above, on the date of receipt, refusal or non-delivery indicated on the return receipt. In addition, either party may send notices by facsimile ("FAX") or by any reputable courier service which provides written proof of delivery. Any notice sent by FAX shall be effective upon confirmation of receipt in legible form, and any notice sent by courier shall be effective upon the date of delivery as set forth in the courier's delivery receipt. Either party may, by notice to the other from time to time, specify a different address for notice purposes.

Section 15.06 Waivers and Consents. No waiver of any provision hereof shall be deemed a waiver of any other provision hereof. Consent to or approval of any act by one of the parties hereto shall not be deemed to render unnecessary the obtaining of such party's consent to or approval of any subsequent act. Except to the extent a provision expressly states otherwise, all consents required to be obtained under this Lease shall not be unreasonably withheld, conditioned or delayed.

Section 15.07 Changes in Land Use. Subject to Section 1.02(c) above, without Tenant's prior written consent, which Tenant not unreasonably withhold, Landlord shall not enter into any agreement or instrument by which the Premises are combined with any other real property for purposes of any law governing zoning, bulk, development rights, or any similar matter, or by which any rights arising under such laws to develop the Premises are transferred to any other real

property or which might restrict Tenant's use of the Premises for the use permitted hereunder.

Section 15.08 Force Majeure. In the event that either Landlord or Tenant is delayed in performing any obligation of Landlord or Tenant pursuant to this Lease by any cause beyond the reasonable control of the party required to perform such obligation, the time period for performing such obligation shall be extended by a period of time equal to the period of the delay. For the purpose of this Section, a cause shall be beyond the reasonable control of a party to this Lease when such cause would affect any person similarly situated (such as a power outage, labor strike or truckers' strike) but shall not be beyond the reasonable control of such party when peculiar to such party (such as financial inability).

Section 15.09 Quitclaim. At the expiration or earlier termination of this Lease, Tenant shall execute, acknowledge and deliver to Landlord, within fifteen (15) days after written demand from Landlord to Tenant, any quitclaim deed or other document, which may be reasonably requested by any reputable title company to remove this Lease as a matter affecting title to the Premises.

Section 15.10 Authority. Each individual executing this Lease on behalf of Landlord and Tenant represents and warrants that the execution and delivery of this Lease on behalf of the party for whom such person is executing is duly authorized and that this Lease is binding upon such party in accordance with its terms.

Section 15.11 Estoppel Certificates.

(a) Tenant Estoppel Certificates. Tenant agrees at any time and from time to time upon not less than twenty (20) days' notice by Landlord to execute, acknowledge and deliver to Landlord a statement in writing certifying (i) that this Lease is unmodified and in full force and effect (or if there have been modifications that the same is in full force and effect as modified and stating the modifications); (ii) whether or not to the best knowledge of Tenant there are then existing any offsets or defenses against the enforcement of any of the terms, covenants or conditions hereof upon the part of Tenant to be performed and, if so, specifying the same; (iii) the dates to which the rent and other charges have been paid, it being intended that any such statement delivered pursuant to this Section may be relied upon by any prospective purchaser of the fee of the real property comprising the Premises; and (iv) such other statements as may reasonably be requested by Landlord.

(b) Landlord Estoppel Certificates. Landlord agrees at any time and from time to time upon not less than twenty (20) days' prior notice by Tenant, to execute, acknowledge and deliver to Tenant a statement in writing certifying (i) that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications); (ii) the dates to which the rent and other charges have been paid; (iii) stating whether or not to the best knowledge of Landlord, Tenant is in default in performance of any covenant, agreement or condition contained in this Lease and, if so, specifying each such default of which Landlord may have knowledge; (iv) whether or not there are to Landlord's best knowledge any offsets or defenses claimed by and/or available to Tenant to the payment of rental, it being intended that any such statement delivered pursuant to this Section may be relied upon by any prospective assignee or Subtenant of the whole or any portion

of the Premises, or by any lender extending credit on the security of Tenant's leasehold estate; and (v) such other statements as may reasonably be requested by Tenant.

Section 15.12 Survival of Indemnities. The obligations of the indemnifying party under each and every indemnification and hold harmless provision contained in this Lease shall survive the expiration or earlier termination of this Lease to and until the last to occur of (a) the last date permitted by law for the bringing of any claim or action with respect to which indemnification may be claimed by the indemnified party against the indemnifying party under such provision or (b) the date on which any claim or action for which indemnification may be claimed under such provision is fully and finally resolved and, if applicable, any compromise thereof or judgment or award thereon is paid in full by the indemnifying party and the indemnified party is reimbursed by the indemnifying party for any amounts paid by the indemnified party in compromise thereof or upon a judgment or award thereon and in defense of such action or claim, including reasonable attorneys' fees incurred. Payment shall not be a condition precedent to recovery upon any indemnification provision contained herein.

Section 15.13 Surrender or Cancellation. The voluntary or other surrender of this Lease by Tenant, or a mutual cancellation thereof, shall not work a merger, and shall terminate all or any existing Subleases, unless Landlord elects to treat such surrender or cancellation as an assignment to Landlord of any or all of such subleases.

Section 15.14 Brokers. Tenant and Landlord each represent and warrant to the other that they have had no dealings with any real estate brokers or agents in connection with the negotiation of this Lease other than Burnham Real Estate Services ("BRES") and that no other broker, agent or other person retained by either of them is entitled to a fee or commission in connection with the execution of this Lease. Landlord agrees to pay any and all fees, commissions or other amounts payable to BRES as and when due up to Fifty Eight Thousand Five Hundred Twenty Nine Dollar Dollars (\$58,529). Each party hereby expressly agrees and covenants to defend, indemnify and hold harmless the other from and against any and all claims, threatened or asserted, by any broker, finder or agent claiming under or through such indemnifying party in connection with the negotiation and execution of this Lease (including all rights addressed herein (such as options and easements)). The foregoing indemnification by Landlord shall also include the obligation to indemnify, defend and hold harmless Tenant from and against any and all commissions or fees payable to BRES as provided above.

Section 15.15 Applicable Law. This Lease shall be governed by and construed in accordance with the laws of the State in which the Premises are situated, but without regard to any conflict of laws rules thereof.

Section 15.16 Construction. The parties acknowledge that the parties and their counsel have reviewed and revised this Lease and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto.

Section 15.17 Gender; Successors in Interest. The use of the masculine pronoun includes the feminine and neuter genders; the use of the singular form of a pronoun includes the plural and vice-versa. The terms, conditions and covenants contained herein shall be binding upon and

inure to the benefit of the heirs, successors, executors, administrators, marital communities, if any, and assigns of the parties hereto.

Section 15.18 Covenants Running with the Land. All of the covenants, agreements, conditions and restrictions set forth in this Lease are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of and enforceable by the parties hereto and their successors and assigns.

Section 15.19 Quiet Enjoyment. Landlord covenants that, so long as Landlord has not terminated this Lease on account of default by Tenant, Tenant shall and may peaceably and quietly have, hold and enjoy the Premises for the Term without molestation or disturbance by or from Landlord or anyone claiming by or through Landlord or having title to the Premises paramount to Landlord, and free of any encumbrances created or suffered by Landlord, except the Permitted Exceptions and restrictions self-imposed by Tenant.

Section 15.20 No Third Beneficiaries. Except for those third-party beneficiaries and rights set forth in Section 12.04, the parties hereto agree that there are no third party beneficiaries to this Lease and that this Lease does not impart enforceable rights to anyone who is not a party.

Section 15.21 No Partnership. Notwithstanding any provision of this Lease, the parties hereto do not intend to create any joint venture, partnership, association taxable as a corporation, or other entity for the conduct of any business for profit. Neither party hereto shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other party.

Section 15.22 No Consequential Damages. NOTWITHSTANDING ANYTHING CONTAINED HEREIN TO THE CONTRARY, IN NO EVENT SHALL EITHER PARTY HERETO BE LIABLE TO THE OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER SPECIAL DAMAGES FOR NONPERFORMANCE OF ITS OBLIGATIONS UNDER THIS LEASE.

ARTICLE XVI CONDITIONS TO EFFECTIVENESS

Section 16.01 Conditions to Effectiveness of Lease. Notwithstanding anything to the contrary in this Lease, the continued effectiveness of this Lease is expressly conditioned upon satisfaction or waiver by Tenant of the following conditions, in each case in the sole and absolute discretion of Tenant:

(a) The determination, in the sole judgment of Tenant, that the Premises and the Easements are suitable for Tenant's intended use.

(b) Issuance by the City and all other governmental authorities with jurisdiction of a building permit and all other discretionary permits and approvals required for Tenant to use, occupy, construct its contemplated improvements, in each case upon such terms and conditions acceptable to Tenant in its sole discretion, and to operate upon the Premises.

(c) Tenant obtaining and approving an A.L.T.A. survey of the Land and the Easements as may be required for issuance of an A.L.T.A. policy of title insurance as provided for in clause (f) below (the "Survey"). Tenant shall be responsible to order and obtain such Survey and shall pay all costs associated with such Survey. Upon request by Tenant, Landlord shall cooperate as reasonably requested by Tenant with respect to such Survey.

(d) Tenant obtaining and approving such soil tests, soil borings, percolation and ground water tests, tests for Hazardous Materials, engineering studies and any other studies test or investigations with respect to the Land and Landlord's Adjacent Property as Tenant deems necessary to determine the suitability and feasibility of the Premises and the Easements for Tenant's intended use. All such tests and studies (collectively, the "Tests") shall be the sole responsibility of Tenant both as to performance and payment of the costs thereof. Landlord shall, upon request of Tenant, furnish to Tenant copies of the results of such Tests previously performed by Landlord (or by a prior tenant and provided to Landlord). Landlord shall also cooperate as reasonably requested by Tenant with respect to such Tests.

(e) Tenant obtaining a written commitment from First American Title Insurance Company or other reputable title insurance company satisfactory to Tenant (the "Title Company") to issue an A.L.T.A. leasehold policy (the "Title Policy") of title insurance in favor of Tenant with a liability limit in an amount Tenant deems necessary (plus costs of defense as allowed by the policy) insuring Tenant's leasehold interest in the Premises and its easement interest in the Easements, including such endorsement coverages as Tenant shall reasonably request and subject only to the following permitted exceptions (the "Permitted Exceptions"):

(i) Real property taxes a lien not yet delinquent;

(ii) Any liens or claims against the Premises created or suffered by Tenant;

(iii) With respect to the Premises, the following matters reflected on Schedule B to that certain commitment for title insurance dated February 23, 2001, issued by the Title Company (the "Title Commitment"), and attached hereto as Exhibit "E": items 1 through 11 in Part One, Section Two of Schedule B (subject, however, to Tenant's receipt and approval of the Survey as provided in subsection (c) above);

(iv) With respect to the Easements, such easements, reservations, rights and conditions as shall not, in Tenant's reasonable judgment, interfere with the use of the Easements as contemplated by this Lease (subject, however, to Tenant's receipt and approval of the Survey as provided in subsection (c) above); and

(v) Such other easements, restrictions, reservations, rights and conditions as may appear on any supplement to the Title Commitment or which may be disclosed by the Survey (each, an "Intervening Exception") and which are not disapproved by Tenant prior to the expiration of the Initial Period (as defined below).

The Title Policy commitment issued by the Title Company shall also include the commitment of the Title Company to issue such endorsements as Tenant or any mortgagee shall reasonably require.

If Tenant shall, within the time herein specified, disapprove any Intervening Exception, Landlord shall have ten (10) days after receipt of Tenant's notice to either (I) remove any such disapproved Intervening Exception as matters affecting title to the Premises or Easements or (II) satisfy Tenant that such disapproved Intervening Exception shall not prevent or interfere with Tenant's use and quiet enjoyment of the Premises or Easements as provided for in this Lease. Landlord will use its best efforts as requested by Tenant in satisfying the condition set forth in this clause (e), and shall bear all costs of removing any Intervening Exception disapproved by Tenant pursuant to this clause (e). Nothing herein, however, shall require Landlord to remove any such disapproved Intervening Exception or require Tenant to accept a title commitment or title insurance policy which is subject to any disapproved Intervening Exception.

Section 16.02 Tenant's Access During Initial Period. During the Initial Period, Tenant and its representatives, agents and independent contractors shall have the right, at Tenant's sole cost and expense, to enter onto the Premises, the Adjacent Premises and Landlord's Adjacent Property at reasonable times for the purpose of conducting all Tests, inspecting the Premises, the Adjacent Premises and the Easements, and performing engineering and surveying studies. Tenant shall (a) perform all work permitted under this Article XVI in a safe manner; (b) not allow any dangerous or hazardous conditions to be created by it on the Premises, the Adjacent Premises or Landlord's Adjacent Property; (c) not discharge or release any Hazardous Materials in, on, or about the Premises, the Adjacent Premises or Landlord's Adjacent Property; (d) comply with all applicable laws and governmental regulations; (e) obtain all permits required to be obtained by any governmental agency and pay any fees, costs, charges and expenses in connection with the issuance of such permits; and (f) be solely responsible for anyone who enters the Premises, the Adjacent Premises or Landlord's Adjacent Property at the request or instruction of Tenant pursuant to this Article XVI. Tenant shall indemnify, defend, protect and hold Landlord and its predecessors, successors and assigns, and its agents, representatives, attorneys, and all other persons acting by, through, under, at the direction of, or in concert with Landlord, or any of them, harmless of and from any and all liabilities, causes of action, losses, damages, claims (including, without limitation, mechanics liens), demands and expenses (including, without limitation, reasonable attorneys' fees, court costs and litigation expenses) of any kind or nature relating to Tenant's entry onto the Premises, the Adjacent Premises or Landlord's Adjacent Property during the Initial Period. Notwithstanding anything to the contrary, nothing contained in this Section 16.02 shall be deemed to indemnify any person or entity against any liability attributable either to its own negligence or to a pre-existing condition upon the Premises or Landlord's Adjacent Property.

Section 16.03 Approval, Disapproval or Waiver of Conditions.

(a) Tenant shall approve, disapprove or waive each of the conditions set forth in Section 16.01 above on or before the expiration of the Initial Period. In the event that Tenant has not approved or waived any condition in writing to Landlord on or before the expiration of the Initial Period, Tenant shall be deemed to have disapproved of such condition. In the event that Tenant shall have disapproved or be deemed to have disapproved any condition set forth in Section 16.01 above, then this Lease shall automatically terminate on the date of disapproval or deemed disapproval of such condition (subject, however, to Landlord's right to cure any Intervening Exception pursuant to Section 16.01(e)). Upon any termination of this Lease

pursuant to this Section 16.03(a), each party shall bear its own costs and expenses incurred in the negotiation and preparation of this Lease and in performing its respective obligations hereunder through the date of such termination, and neither party shall have any further obligation to the other hereunder, except as provided in Section 16.02 above and except that nothing herein shall be deemed to relieve Landlord from liability or damages in the event of a failure of any condition as a result of a breach or default by Landlord of any representation, warranty or covenant contained in this Lease. Pending any such termination, each party shall perform its respective obligations pursuant to this Lease to be performed by it during the Initial Period.

(b) As used herein, the term "Initial Period" shall mean the period commencing on the Effective Date and expiring on the Commencement Date; provided, however, that the Initial Period shall not extend beyond the date seven (7) months after the Effective Date.

ARTICLE XVII REPRESENTATIONS, WARRANTIES AND COVENANTS

Section 17.01 By Landlord. Landlord hereby represents, warrants and covenants that the following are and will be true and correct as of the Effective Date and as of the Commencement Date:

(a) Landlord is a duly formed and validly existing legal entity in good standing and qualified to do business in the State of California. Landlord has the legal power, right and authority to enter into this Lease and to consummate the transaction contemplated hereby. The person executing this Lease on behalf of Landlord has been duly authorized to do so;

(b) Landlord is solvent, has timely and accurately filed all tax returns required to be filed by it, and is not in default in the payment of any taxes levied or assessed against it or any of its assets, or subject to any judgment, order, decree, rule or regulation of any governmental authority which would, in each case or in the aggregate, adversely affect the Premises or this Lease;

(c) Landlord has previously delivered to Tenant all plans, maps, permits, reports, studies and tests (including, without limitation any and all environmental or soil studies or tests) either previously performed by Landlord or its agents or to which Landlord has or may obtain possession of;

(d) Except for potential highway expansion proposed by CalTrans, there are no actions, proceedings or investigations, including a taking, pending or threatened, against or affecting Landlord or the Premises;

(e) Current local zoning ordinances, general plans and other applicable land use regulations and all private covenants, conditions and restrictions, if any, affecting the Premises permit the lease of the Premises to Tenant without the consent or approval of any third party;

(f) No person or any legal entity other than Landlord has any right to occupancy or possession of the Premises;

(g) The Premises is in compliance in all material respects with all governmental requirements; and

(h) There are no underground tanks or Hazardous Materials located on the Premises, no such tanks have ever been located on the Premises and no such Hazardous Materials have ever been present, used, stored, treated, released from or disposed of or on the Premises; (ii) no enforcement, cleanup, removal or other governmental or regulatory actions have, at any time, been instituted or, to the best of Landlord's knowledge, threatened with respect to the Premises; (iii) there is no current or, to the best of Landlord's knowledge, prior violation or state of noncompliance with any Environmental Law relating to Hazardous Materials with respect to the Premises; (iv) no claims have been made or, to the best of Landlord's knowledge, threatened by any third party with respect to the Premises relating to damage, contribution, cost recovery, compensation, loss or injury resulting from or related to any Hazardous Materials; and (v) to the best of Landlord's knowledge, there are no current, and have been no, businesses engaged in the storage, treatment or disposal of Hazardous Materials on any property adjacent to the Property.

Section 17.02 Landlord Cooperation. Landlord agrees that if and when Tenant shall require the execution and delivery of any instrument to evidence the consummation of the dedication, abandonment or relocation of any street, access way, parking areas or other easements adjoining or for the use of the Premises, and such proposed action does not materially and adversely affect Landlord's fee title thereto or use of the Adjacent Premises, then Landlord will execute, acknowledge and deliver any such reasonable instrument or document as may be required to effect such action, without cost to Landlord. Landlord further agrees that it shall cooperate with Tenant in obtaining any necessary annexation and zoning change(s) or building or other permits or approvals required for Tenant's use of the Premises upon written request by Tenant to Landlord. Landlord's reasonable cooperation, as provided for herein, shall include, among other things, granting necessary approvals and executing, acknowledging and delivering any necessary instruments or documents; provided, however, that such actions do not adversely affect Landlord's fee title to the Premises or require Landlord to expend any sums of money in connection with its cooperation.

Section 17.03 Landlord Permit Cooperation. Landlord shall cooperate and actively participate in Tenant's efforts to obtain all necessary governmental approvals required for the construction and operation of the facility and to accomplish such tasks in a timely manner by executing permits and entitlement applications, subdivision maps, utility easements and the like, including, without limitation any certificate or other instrument required to comply with the Map Act or any local ordinance or regulation which would limit Tenant's use of the Premises. Without limiting the foregoing, Landlord shall endeavor to obtain any required approvals from lenders or other parties, if any, having an interest in the Premises who accordingly are required to execute or approve such map or instrument. All reasonable expenses incurred in connection with obtaining such approvals shall be paid by Tenant.

[Signature Page Follows]

IN WITNESS WHEREOF the parties hereto have executed this Lease as of the day and year first above written.

"Landlord"

**CIF HOLDINGS, L.P.,
a California limited partnership**

**By: PVCC, Inc.,
a California corporation
Title: General Partner**

By: Robert D Houch 6/8/01

Print Name: ROBERT D Houch

Title: PRESIDENT

"Tenant"

**CALPEAK POWER, LLC,
a Delaware limited liability**

By: Charles Hineley

Print Name: Charles Hineley

Title: Vice President

IN WITNESS WHEREOF the parties hereto have executed this Lease as of the day and year first above written.

"Landlord"

**CIF HOLDINGS, L.P.,
a California limited partnership**

**By: PVCC, Inc.,
a California corporation
Title: General Partner**

By: _____

Print Name: _____

Title: _____

"Tenant"

**CALPEAK POWER, LLC,
a Delaware limited liability**

By: Charles H. Hinkley

Print Name: Charles Hinkley

Title: Project Director

EXHIBIT A

LEGAL DESCRIPTION OF PREMISES

[See attached]



NO. 1068-2 (REV. 10/17/92)

COMMITMENT

ORDER NO. 1259769-20

N/A 132216

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SAN DIEGO, AND IS DESCRIBED AS FOLLOWS:

THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 18 SOUTH, RANGE 1 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

EXCEPTING THAT PORTION OF THE HEREIN ABOVE DESCRIBED LAND DEEDED TO THE STATE OF CALIFORNIA BY FINAL ORDER OF CONDEMNATION RECORDED JULY 13, 1984, AS DOCUMENT NO. 84-270625 OF OFFICIAL RECORDS. SAID PORTION BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 36; THENCE NORTH $00^{\circ}52'13''$ EAST ALONG THE WESTERLY LINE OF SAID NORTHWEST QUARTER A DISTANCE FOR 659.63 FEET TO THE SOUTHWEST CORNER OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 36 AND THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH $00^{\circ}52'13''$ EAST ALONG SAID WESTERLY LINE, A DISTANCE OF 834.82 FEET TO A POINT ON THE ARC OF A 1,540.00 FOOT RADIUS CURVE CONCAVE SOUTHWESTERLY, A RADIAL BEARS NORTH $77^{\circ}46'59''$ EAST TO SAID POINT, THENCE SOUTHEASTERLY AND SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $13^{\circ}05'14''$ A DISTANCE OF 351.76 FEET; THENCE SOUTH $00^{\circ}52'13''$ WEST 289.48 FEET TO THE BEGINNING OF A TANGENT 1,960.00 FOOT RADIUS CURVE, CONCAVE EASTERLY; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $05^{\circ}45'28''$ A DISTANCE OF 196.96 (PLUS/MINUS) FEET TO THE SOUTHERLY LINE OF THE NORTHERLY HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 36; THENCE NORTH $89^{\circ}12'29''$ WEST ALONG SAID SOUTHERLY LINE, A DISTANCE OF 49.89 (PLUS/MINUS) FEET RETURNING TO THE TRUE POINT OF BEGINNING.

ALSO EXCEPTING THAT PORTION DESCRIBED IN PARCEL 1 IN DEED TO THE CITY OF SAN DIEGO, RECORDED JUNE 16, 1986 AS DOCUMENT NO. 86-241305 OF OFFICIAL RECORDS, SET OUT AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER; THENCE SOUTH $88^{\circ}45'28''$ EAST ALONG THE SOUTHERLY LINE OF SAID NORTHWEST QUARTER, A DISTANCE OF 193.16 FEET TO A POINT IN THE ARC OF A 2,000 FOOT RADIUS CURVE, CONCAVE NORTHEASTERLY, A RADIAL BEARS SOUTH $65^{\circ}28'54''$ WEST TO SAID POINT; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $25^{\circ}23'19''$ A DISTANCE OF 886.23 FEET TO A POINT ON THE WESTERLY LINE OF SAID SECTION 36, BEING ALSO A POINT TO WHICH A RADIAL BEARS NORTH $89^{\circ}07'47''$ WEST; THENCE SOUTH $89^{\circ}07'47''$ EAST ALONG SAID RADIAL LINE A DISTANCE OF 40.00 FEET TO THE EASTERLY LINE OF THAT REAL PROPERTY DESCRIBED AS PARCEL 44 IN



NO. 1068-2 (REV. 10/17/92)

ORDER NO. 1259769-20

N/A 132216

THE FINAL ORDER OF CONDEMNATION RECORDED JULY 18, 1984 AS DOCUMENT NO. 84-27065 OF OFFICIAL RECORDS OF SAN DIEGO COUNTY BEING THE TRUE POINT OF BEGINNING; THENCE NORTH $00^{\circ}52'13''$ EAST ALONG SAID EASTERLY LINE, A DISTANCE OF 247.03 FEET TO THE BEGINNING OF A TANGENT 1,540 FOOT RADIUS CURVE, CONCAVE WESTERLY; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $09^{\circ}14'39''$ A DISTANCE OF 248.47 FEET; THENCE NORTH $00^{\circ}52'13''$ EAST, 12.16 FEET TO A POINT OF CUSP WITH THE ARC OF A 1,542 FOOT RADIUS CURVE, CONCAVE WESTERLY A RADIAL BEARS NORTH $81^{\circ}10'49''$ EAST TO SAID POINT; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $09^{\circ}41'24''$ A DISTANCE OF 260.79 FEET; THENCE TANGENT TO SAID CURVE SOUTH $00^{\circ}52'13''$ WEST 202.03 FEET; THENCE SOUTH $89^{\circ}07'47''$ EAST 1.00 FEET; THENCE SOUTH $00^{\circ}52'13''$ WEST, 45.00 FEET; THENCE NORTH $89^{\circ}07'47''$ WEST, 3.00 FEET RETURNING TO THE TRUE POINT OF BEGINNING.

EXHIBIT B

PLOT PLAN DEPICTING PREMISES
(including Useable Premises and Adjacent Premises)

HWY 905

NORTH 1/2

OF THE SW 1/4,

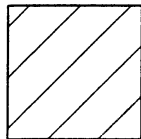
OF THE NW 1/4,

SEC 36, T18S,

R1E, SBM

SANYO AVENUE

PARCEL "E"



INDICATES PARCEL "E":
LEASEHOLD PURPOSES



SCALE: 1"=200'

LEGAL DESCRIPTION EXHIBIT
BORDER SITE - LEASEHOLD PARCEL

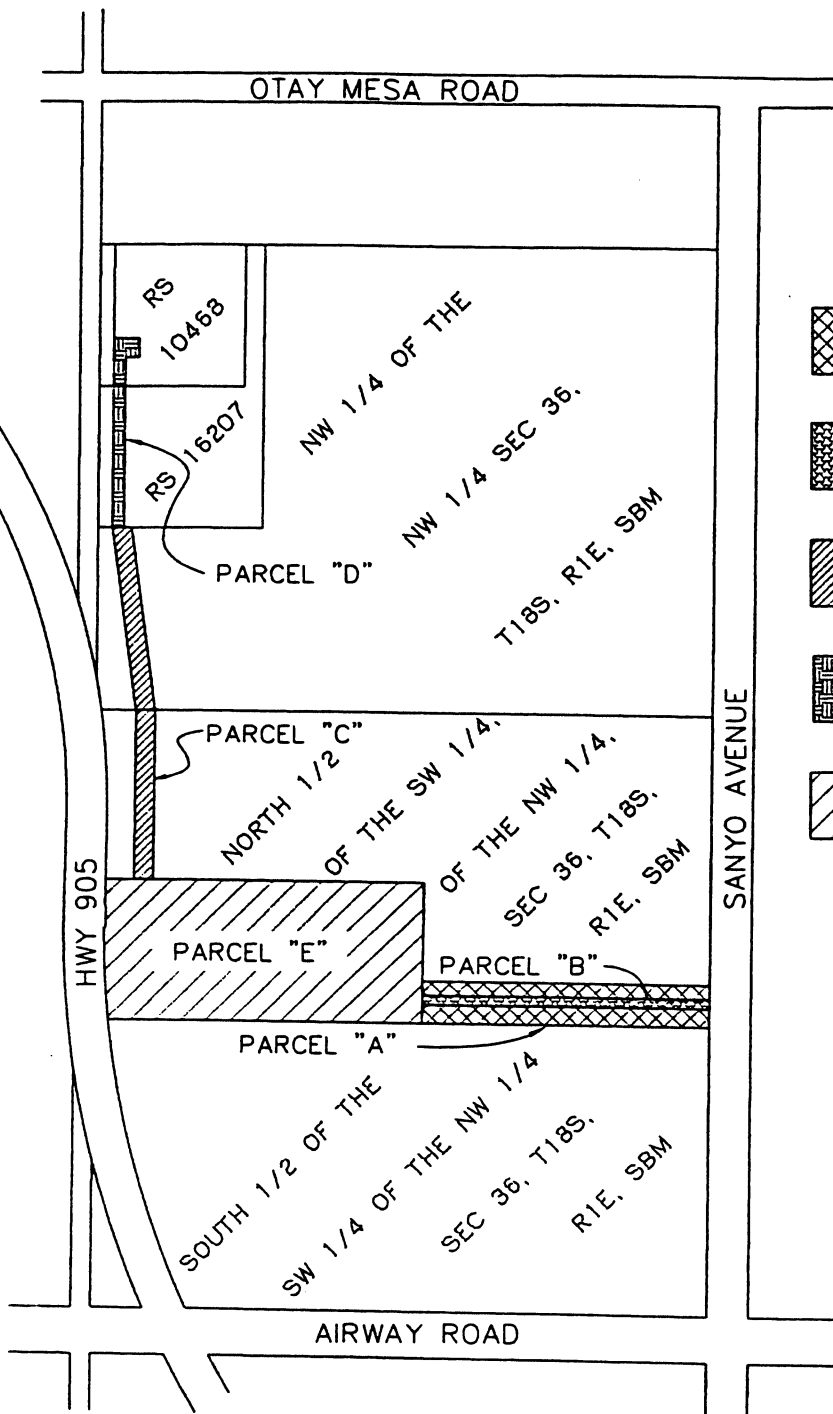







JOHNSON-FRANK & ASSOC., INC.

LAND SURVEYING & MAPPING
5150 E. HUNTER AVENUE
ANAHEIM, CALIFORNIA 92807-2049
(714) 777-8877 FAX (714) 777-1641

EXHIBIT C

PLOT PLAN DEPICTING EASEMENTS
(ON BOTH ADJACENT PREMISES
AND
LANDLORD'S ADJACENT PROPERTY)



-  INDICATES PARCEL "A": INGRESS AND EGRESS PURPOSES
-  INDICATES PARCEL "B": UTILITY PURPOSES
-  INDICATES PARCEL "C": UTILITY PURPOSES
-  INDICATES PARCEL "D": UTILITY PURPOSES
-  INDICATES PARCEL "E": LEASEHOLD PURPOSES



SCALE: 1"=400'

LEGAL DESCRIPTION EXHIBIT BORDER SITE



JOHNSON-FRANK & ASSOC., INC.

LAND SURVEYING & MAPPING
5150 E. HUNTER AVENUE
ANAHEIM, CALIFORNIA 92807-2049
(714) 777-8877 FAX (714) 777-1641

EXHIBIT D

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Attn: _____

MEMORANDUM OF LEASE

THIS LEASE HEREIN IS FOR A PERIOD
OF TIME LESS THAN 99 YEARS.

A.P.N. _____

CIF HOLDINGS, L.P., a California limited partnership ("Landlord"), hereby leases to CALPEAK POWER, LLC, a Delaware limited liability ("Tenant"), that certain real property located at _____ in the City of San Diego, California (the "City"), and more particularly described on Exhibit "A" attached hereto (the "Premises").

1. The rent payable by Tenant and the other terms of the tenancy are set forth in a certain unrecorded Ground Lease between Landlord and Tenant dated May __, 2001 (the "Lease"), the provisions of which Lease are incorporated herein by this reference, and covering the Premises.

2. The Initial Term of the Lease commences on the Commencement Date (as defined in the Lease) and expires ten (10) full Lease Years (as defined in the Lease) thereafter. In addition, Tenant has two (2) options to extend the Lease for five (5) Lease Years each.

3. The Lease grants to Tenant the right of first refusal to purchase the Premises and the Easements (as defined in the Lease) upon the terms, covenants and conditions set forth in the Lease.

4. The Lease grants to Tenant the option to purchase the Premises and the Easements, if Tenant exercises such option within thirty (30) days of notice to Tenant that the Premises constitute a separate legal lot for purposes of purchase and sale under the California Subdivision Map Act.

5. Pursuant to the Lease, Landlord has agreed to grant to Tenant of easements in, on, over, under and across the property adjacent to the Premises owned by Landlord and described on Exhibit "B": attached hereto to be used in connection with Tenant's operations on the Premises (the "Adjacent Property"). Accordingly, from time to time, Landlord shall grant to Tenant (and/or any public or private utility provider designated by Tenant) any non-exclusive easements, which shall be appurtenant to the Premises, the Lease and Tenant's leasehold interest in the Premises, in, on, over, under and across the Adjacent Property for the purpose of the construction, installation, maintenance, repair, replacement and removal from time to time of gas, electric, water, sewer, drainage and other utility improvements necessary or desirable for Tenant's use of the Premises.

6. This instrument is executed solely for recording purposes and nothing herein shall be deemed or construed to modify or vary the terms of the Lease.

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of

Lease as of the _____ day of _____, 2001.

“Landlord”

CIF HOLDINGS, L.P.,
a California limited partnership

By: PVCC, Inc.,
a California corporation
Title: General Partner

By: _____

Print Name: _____

Title: _____

“Tenant”

CALPEAK POWER, LLC,
a Delaware limited liability

By: _____

Print Name: _____

Title: _____

STATE OF _____

COUNTY OF [_____]

On _____, before me, _____,
Notary Public, personally appeared _____ and
_____, ☐ personally known to me OR ☐ proved to me on the
basis of satisfactory evidence to be the persons whose names are subscribed to the within
instrument and acknowledged to me that they executed the same in their authorized capacities,
and that by their signatures on the instrument the persons, or the entity upon behalf of which the
persons acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary

STATE OF _____

COUNTY OF [_____]

On _____, before me, _____,
Notary Public, personally appeared _____ and
_____, ☐ personally known to me OR ☐ proved to me on the
basis of satisfactory evidence to be the persons whose names are subscribed to the within
instrument and acknowledged to me that they executed the same in their authorized capacities,
and that by their signatures on the instrument the persons, or the entity upon behalf of which the
persons acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary

EXHIBIT A TO MEMORANDUM OF
LEASE

Legal Description of the Premises

Exhibit B to Memorandum of Lease

EXHIBIT E

TITLE COMMITMENT

[See Attached]

EXHIBIT F

Guaranty

The undersigned, UT Finance Corporation (the "Guarantor"), unconditionally guarantees to CIF Holdings, L.P. ("Partnership"), the due and timely payment and performance of all obligations of CalPeak Power LLC ("CalPeak") under (a) Article III of that certain Ground Lease dated as of [Date], by and between Partnership and CalPeak (the "Lease"), up to, but not exceeding, the sum of \$390,000 in Base Rent and any Special Additional Rent owed by Landlord to Tenant and (b) Section 2.06 of the Lease, up to, but not exceeding, the aggregate amount of \$500,000 (such Article and such Section, collectively, the "Agreement"). Guarantor agrees that the Agreement is enforceable against CalPeak in accordance with its terms. This Guaranty is irrevocable until such obligations are performed in full, irrespective of (i) any modifications or amendments to the Agreement, (ii) the bankruptcy or insolvency of CalPeak, (iii) any change in the time, manner or place of performance of any or all of the obligations of CalPeak guaranteed hereby, or (iv) any amendment to, or waiver of, or consent to departure from, any or all of the obligations of CalPeak under the Agreement. The obligations of Guarantor hereunder shall not be impaired, diminished, released or reduced by any occurrence or circumstance which might otherwise constitute a defense available to, or a discharge of, Guarantor or any other person or entity with regard to all or any part of the obligations guaranteed hereby. In the event that Partnership must rescind or restore any payment, or part thereof, received by Partnership in satisfaction of the obligations of CalPeak under the Agreement, any prior release or discharge from the terms of this Guaranty shall be without effect, and this Guaranty shall remain in full force and effect. Guarantor waives all requirements for notice or demand which may lawfully be waived under any applicable law; however, Guarantor reserves the right to assert any claims and defenses that CalPeak is entitled to assert under the Agreement. This Guaranty is an absolute, continuing guaranty of payment and performance and not a guaranty of collection; no beneficiary of this Guaranty shall be required to sue or exhaust any remedies against CalPeak prior to making a demand hereunder and enforcing this Guaranty. This Guaranty shall be governed by the laws of the State of New York, USA, without giving effect to the provisions, policies or principles thereof relating to conflict of laws and Guarantor submits to the personal jurisdiction of the courts of the State of New York and the U.S. federal courts located in New York for purposes of any suit, action or proceeding relating to this Guaranty.

Guarantor further agrees to pay to Partnership any and all reasonable costs and expenses (including court costs and reasonable attorneys' fees) incurred by Partnership in the preservation and/or enforcement of its rights and remedies hereunder, provided that it is ultimately determined (by the parties, an arbitral tribunal, a court or otherwise) that Partnership is entitled to payment by Guarantor.

UT FINANCE CORPORATION

By: _____
Name: _____
Title: _____

APPENDIX G
AUTHORITY TO CONSTRUCT APPLICATION

**Authority to Construct Application
for CalPeak Power Lonestar No. 4
49.5 MW Simple Cycle Power Plant
- New Site Location -**

Powers Engineering Project PATCH-01-01
May 14, 2001

Prepared for:

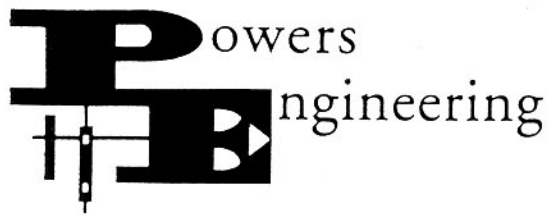
CalPeak Power, LLC
San Diego, CA

**Powers Engineering
4452 Park Boulevard, Suite 209
San Diego, California 92116**

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BACT Evaluation.....	5
AQIA and Rule 1200 Compliance Evaluation.....	6
Thomas Guide Map and Plot Plan	7

Cover Letter



May 14, 2001

Ms. Alta Stengel
San Diego Air Pollution Control District
9150 Chesapeake Drive
San Diego, CA 92123

SUBJECT: Revised CalPeak Power LLC Authority to Construct Permit Application for a Simple Cycle Gas Turbine Power Plant Located in Otay Mesa

Dear Alta:

Enclosed is the new ATC application for a relocated 49.5 MW simple cycle turbine generator plant to be located at the intersection of Hwy. 905 and Harvest Road on Otay Mesa. The new site is approximately one mile south of the site location in the original ATC application submittal dated February 3, 2001. The original ATC application was cancelled in an April 24, 2001 Powers Engineering letter to the District. You indicated in a March 20 e-mail that the filing fee for the new site is \$15,950 and later (April 16) that the \$9,285.40 remaining in the original ATC application filing fee account can be applied to the reapplication fee. For this reason, CalPeak Power has enclosed a check for \$6,664.60 for the processing of this application.

Application Information

In addition to the application fee, the following application elements are included in this ATC application:

- General Permit/Registration Application Form and Checklist
- Fee Schedule 20(f) for Gas Turbines
- Regulatory Evaluation
- Emission Estimates
- BACT Evaluation
- Air Quality Modeling Impacts
- Thomas Brothers Site Map Location and Plot Plan

Proposed Project Overview

The plant will consist of two natural gas-fired, simple cycle combustion gas turbines with a common generator rated at 49.5 MW. The site will be a non-major stationary source, will not trigger AQIA, and will employ BACT/LAER for the subject pollutants (NO_x, PM₁₀, VOC and SO_x). NO_x emissions will be controlled using SCR. The SCR reagent will be aqueous ammonia with an ammonia concentration less than 20 percent. Ammonia slip will be controlled to 10 ppm. CO emissions will be controlled using an oxidation catalyst.

Ms. Alta Stengel
May 14, 2001
Page 2 of 2

Please contact me at (619) 295-2072 if you would like to discuss any aspect of this ATC application.

Sincerely,

Bill Powers, P.E.

Bill Powers, P.E.

**ATC Application Form and 20F Gas
Turbine Supplemental Application
Information Form**

PERMIT / REGISTRATION APPLICATION**FILING THIS APPLICATION DOES NOT GRANT PERMISSION TO CONSTRUCT OR TO OPERATE EQUIPMENT**

IMPORTANT REMINDERS: Read instructions on the reverse side of this form prior to completing this application. Please ensure that all of the following are included before you submit the application:

☐ Appropriate Permit Fee ☐ Completed Supplemental Form(s) ☐ Signature on Application

REASON FOR SUBMITTAL OF APPLICATION: (check the appropriate item and enter Application (AP) or Permit to Operate (PO) number if required)

1. ☒ New Installation 2. ☐ Existing Unpermitted Equipment or Rule 11 Change 3. ☐ Modification of Existing Permitted Equipment
 4. ☐ Amendment to Existing Authority to Construct or AP 5. ☐ Change of Equipment Location
 7. ☐ Change of Permit Conditions 8. ☐ Change Permit to Operate Status to Inactive 9. ☐ Banking Emissions
 10. ☐ Registration of Portable Equipment 11. ☐ Other (Specify) _____
 12. List affected AP/PO#(s): _____

APPLICANT INFORMATION

13. Name of Business (DBA) CalPeak Power, LLC
 14. Nature of Business Energy Service Provider
 15. Does this organization own or operate any other APCD permitted equipment at this or any other adjacent locations in San Diego County? ☐ Yes ☒ No
 If yes, list assigned location ID's listed on your PO's _____
 16. Type of Ownership ☐ Corporation ☐ Partnership ☐ Individual Owner ☐ Government Agency ☒ Other Limited Liability Partnership
 17. Name of Legal Owner (if different from DBA) _____

- | | A. Equipment Owner | B. Authority to Construct (if different from A) |
|---------------------|---|--|
| 18. Name | <u>CalPeak Power, LLC</u> | _____ |
| 19. Mailing Address | <u>701 B Street, Suite 340</u> | _____ |
| 20. City | <u>San Diego</u> | _____ |
| 21. State | <u>CA</u> Zip <u>92101</u> | _____ Zip _____ |
| 22. Phone | <u>(619) 239-1212</u> FAX <u>(619) 239-1307</u> | <u>()</u> FAX <u>()</u> |
| | C. Permit to Operate (if different from A) | D. Billing Information (if different from A) |
| 23. Name | _____ | _____ |
| 24. Mailing Address | _____ | _____ |
| 25. City | _____ | _____ |
| 26. State | _____ Zip _____ | _____ Zip _____ |
| 27. Phone | <u>()</u> FAX <u>()</u> | <u>()</u> FAX <u>()</u> |

EQUIPMENT/PROCESS INFORMATION: Check Type of Equipment: ☒ Stationary ☐ Portable - Will operation exceed 180 days: ☐ Yes ☐ No

28. Equipment Location Address Harvest Rd. and Hwy 905 City San Diego
 29. State CA Zip _____ Phone () FAX ()
 30. Site Contact _____ Title _____ Phone ()
 31. General Description of Equipment/Process 49.5 MW gas turbine for power generation.

32. Application Submitted by ☒ Owner ☐ Operator ☐ Contractor ☐ Consultant Affiliation _____

I hereby certify that all information provided on this application is true and correct.

33. SIGNATURE _____ Date _____
 34. Print Name _____ Title _____

35. Company _____ Phone () _____

APCD USE ONLY

AP # _____ ID # _____ Cust. No. _____ Sector: _____ UTM's X _____ Y _____ SIC _____

Receipt # _____ Date _____ Amt Rec'd \$ _____ Fee Code _____

Engineering Contact _____ Fee Code _____ AP Fee \$ _____ T&M Renewal Fee \$ _____

Refund Claim # _____ Date _____ Amt \$ _____

Application Generated By _____ NV# _____ NC # _____ Other _____ Date _____

Inspector _____

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

**SUPPLEMENTAL APPLICATION
INFORMATION**

**FEE SCHEDULE
20 F**

San Diego APCD Use Only

Appl. No.:

ID No.:

GAS TURBINE

(Please type or print the information requested below.)

Company Name: CalPeak Power, LLC

Equipment Address: Intersection of Harvest Rd. and Hwy. 905

A. EQUIPMENT AND PROCESS DESCRIPTION

ENGINE USE: *(Check all that apply.)*

Power Generation: 49.5 kw Steam Generation: _____ lbs/hr steam

Other (Specify capacity.): **See BACT EVALUATION for equipment and process description.**

ENGINE SPECIFICATIONS:

Manufacturer: Pratt & Whitney Model No.: FT-8 Twin Pac S/N: _____

HP Rating: _____ Fuel Consumption Rate: 500 (HHV) MM BTU/HR

1. Type of Liquid Fuel Used*: None Fuel Rate(Specify Units): _____

Maximum %sulfur by wt. in fuel*: _____ %

2. Type of Gaseous Fuel Used*: Natural Gas Fuel Rate: 492,290 cfh

Maximum Grains PM/100DSCF @ 12% O₂: < 1 grains/100dscf

B. EMISSION CONTROL EQUIPMENT: *(Check all that apply)*

☒ Low NO_x burner

☒ CO oxidation catalyst

☒ SCR w/ Ammonia injection

☐ Hydrogenous

☒ Aqueous

Describe the control equipment to be installed and submit its technical data:

See REGULATORY EVALUATION for control equipment specifications.

C. EMISSION DATA **See EMISSION ESTIMATES for worse-case emissions.**

Provide the manufacturer's specifications and emission factors (lbs/1,000 lbs of fuel) for oxides of nitrogen (NO_x), Carbon monoxide (CO), Hydrocarbons (HC), and particulate matter (PM) for the engine at different power settings with corresponding engine exhaust flow rates and temperatures.

D. EXHAUST STACK AND BLDG. DIMENSIONS *(if air quality modeling is required).*

Stack location: roof top (i.e., roof top, wall, ground), direction: X vertical horizontal

Stack dimensions: internal 12 ft. diameter, or ft. wide x ft. long

Stack dimensions: external ft. diameter, or ft. wide x ft. long

(If other shape, then supply sketch of stack cross section)

See AIR QUALITY MODELING IMPACTS for BPIP, eg., stack location, building dimensions.

Use an attached page to provide this information for each engine at each power setting.

Stack height: Above roof: ft. Above ground level: 50 ft.

Site elevation above mean sea level (MSL) 305 ft.

Building dimensions: length 67 ft.; width 14 ft.; height 42 ft.

(Supply sketch w/position of exhaust stack)

Supply a plot plan showing the test cell/stand location with respect to nearby streets, property lines, and buildings.

See AIR QUALITY MODELING IMPACTS for stacks, building dimensions; see attached figures.

E. OTHER EMISSION PRODUCING EQUIPMENT AT THE SITE

APCD permitted yes X no

Non permitted yes X no

F. Additional Information N/A

G. Operating Schedule:* Hours/day: 24 Days/yr: 365

**Emission calculations will be performed using these values and permit conditions may result to comply with applicable rules.*

Name of Preparer: **Title:**

Phone No.: **Date:**

NOTE TO APPLICANT:

Before acting on an application for Authority to Construct, Permit to Operate, or Permit to Sell or Rent, the District may require further information, plans, or specifications. Forms with insufficient information may be returned to the applicant for completion, which will cause a delay in application processing and may increase processing fees. The applicant should correspond with equipment and material manufacturers to obtain the information requested on this supplemental form.

Regulatory Evaluation

**PRATT & WHITNEY FT-8 TWIN PAC REGULATORY EVALUATION
CALPEAK LONESTAR No. 4 SITE**

I. Application Information:

Owner/Operator: CalPeak Power LLC

Project Contact: Chuck Hinckley, 619-239-1212

II. Reason for Application

New Emission Unit: Application is for two natural gas-fired simple-cycle gas turbines serving a common generator at a new non-major stationary source. The purpose of the installation is to provide power to the grid during periods of high electricity demand.

III. Equipment Description

The purpose of this simple-cycle gas turbine power plant is to provide power to the grid during periods of high electricity demand. The plant consists of a Pratt & Whitney FT-8 Twin Pac simple-cycle, natural gas-fired peaking unit with a heat rate (HHV) of 10,200 Btu/kW-hr. The FT-8 Twin Pac consists of two 24.7 MW combustion turbines that are connected to a common 49.5 MW (net) generator. The rated heat input of the FT-8 is 500 MMBtu/hr (HHV). The rated electric power output is 49.5 MW (net) at ISO conditions. Exhaust flue gas from the two FT-8 turbines will be combined and directed to a common CO and VOC oxidation catalyst and a common selective catalytic reduction (SCR) system.

IV. Process Description

Simple-cycle gas turbines firing only natural gas will be used to provide power to the grid during periods of high electricity demand. A SCR system will be used to control NO_x emissions to not more than (excluding start-up and shutdown periods): 3 ppm at 15 percent O₂ averaged over three hours, 2.5 ppm averaged over 24 hours, and 2 ppm averaged over the total number of operating hours in a calendar year. An oxidation catalyst will be used to control CO emissions to 6 ppm at 15 percent O₂. Ammonia slip will be limited to 10 ppm at 15 percent O₂. Natural gas firing and good, efficient combustion practices will be used to minimize PM₁₀, SO_x, and VOC emissions. Gas turbine operations will comply with Rule 69.3.1, as well as with other District rules associated with combustion sources.

V. Potential to Emit (PTE) Estimates and Regulatory Requirements Triggered

POTENTIAL TO EMIT (PTE) EMISSIONS

Assume:	49.5	MW	Generator gross output [2 turbines per generator]
	10,190	Btu/kW-hr	Heat rate - HHV (assumes LHV:HHV ratio of 0.901)
	492,290	scf/hr	Fuel flow at 100% load, ISO conditions
	1,020.0	Btu/scf	Natural gas heat value (HHV)
	24	hrs/day	Operations
	8,760	hrs/yr	

Pollutant	lb/hr	NOTES
NOx	6.18	[NOx w/SCR control, 3 ppm 3-hour limit, 59 oF]
NOx	[123.6 lb/day]	[NOx w/SCR control, 2.5 ppm 24-hour average limit, 59 oF]
NOx	[18.0 ton/year]	[NOx w/SCR control, 2 ppm annual average of hours operated, 59 oF]
CO	7.54	[CO emission rate at 6 ppm guarantee level]
PM10	3.33	[EPA July 2000 AP-42 EF, 6.76 lb/MMcf]
VOC	1.03	[EPA AP-42 VOC EF = 2.09 lb/MMcf (~1.0 ppm)]
SO2	1.70	[EPA July 2000 AP-42 EF, 3.45 lb/MMcf]
NH3	7.6	[10 ppm]

**PRATT & WHITNEY FT-8 TWIN PAC REGULATORY EVALUATION
CALPEAK LONESTAR No. 4 SITE**

NSR PERMIT THRESHOLDS

TRIGGER LEVELS: Rule 20.1, et. al, relevant trigger levels for permitting.

<u>Pollutant</u>	<u>AQIA (lb/hr)</u>	<u>AQIA (lb/day)</u>	<u>AQIA (tons/yr)</u>	<u>BACT (lb/day)</u>	<u>Major Source (tons/yr)</u>	<u>Offsets (tons/yr)</u>
NOx	25	250	40	10	50	50
CO	100	550	100	NA	250	250
PM10	---	100	15	10	100	100
VOC	NA	NA	NA	10	50	50
SO2	25	250	40	10	100	100

PTE EMISSION ESTIMATES:

<u>Pollutant</u>	<u>(lb/hr)</u>	<u>(lb/day)</u>	<u>(tons/yr)</u>
NOx	6.18	123.6	18.0
CO	7.54	181.0	33.0
PM10	3.33	79.9	14.6
VOC	1.03	24.7	4.5
SO2	1.70	40.8	7.4

REGULATORY REQUIREMENT TRIGGERED?

<u>Pollutant</u>	<u>AQIA (lb/hr)</u>	<u>AQIA (lb/day)</u>	<u>AQIA (tons/yr)</u>	<u>BACT (lb/day)</u>	<u>Major Source (tons/yr)</u>	<u>Offsets (tons/yr)</u>
NOx	No	No	No	Yes	No	No
CO	No	No	No	No	No	No
PM10	NA	No	No	Yes	No	No
VOC	NA	NA	NA	Yes	No	No
SO2	No	No	No	Yes	No	No

VI. Applicable Rule Evaluation Results

Applicable Rule	Allowable Emissions or Minimum Controls	ATC Expected Emissions or Control Level
19.2 – CEMs	NO _x and CO CEMs will be utilized	Complies. CEMs operational when turbines are on-line
20.1(d)(1) – PTE Calcs	Emission estimates	See Paragraph V
20.2(d)(1) – BACT	NO _x , VOC, PM ₁₀ , SO ₂ > 10 lbs/day (see Note 1)	BACT Complies NO _x ≤ 2 ppm at 15 % O ₂ (annual ave. of hours operated) NO _x ≤ 2.5 ppm at 15 % O ₂ (24-hour average) NO _x ≤ 3 ppm at 15 % O ₂ (3-hour average) CO ≤ 6 ppm at 15 % O ₂ VOC ≤ 2 ppm at 15 % O ₂ PM ₁₀ ≤ 1 gr S/100 scf equiv. SO _x ≤ 1 gr S/100 scf
20.2(d)(2) – AQIA	Emissions are less than AQIA hourly, daily and annual thresholds for all pollutants	Complies (See Paragraph V)

**PRATT & WHITNEY FT-8 TWIN PAC REGULATORY EVALUATION
CALPEAK LONESTAR No. 4 SITE**

VII. Applicable Rule Evaluation Results (continued)

Applicable Rule	Allowable Emissions or Minimum Controls	ATC Expected Emissions or Control Level
20.5 – Power Plants (CEC)	< 50 MW trigger	N/A
53 – PM ₁₀ , sulfur	< thresholds	Complies (see Note 2).
53.2 – NSPS	Meets NSPS Subpart GG	Complies. See BACT
62 – Fuel Sulfur content	natural gas only	Complies (see Note 2).
62.1 – NSPS fuel sulfur	natural gas only	Complies (see Note 2).
69.3 – Gas turbine RACT	NO _x meets BACT	Complies. NO _x ≤ 2 ppm at 15 percent O ₂
69.3.1 – Gas turbine BARCT	NO _x meets BACT	Complies. NO _x ≤ 2 ppm at 15 percent O ₂
Reg X – NSPS Subpart A	Parametric monitoring of NO _x using “water to fuel ratio”	Complies. Turbines do not use water injection. NO _x CEM will be used.
Reg X – NSPS Subpart GG	NO _x meets BACT; SO _x meets BACT	Complies. NO _x ≤ 2 ppm at 15 percent O ₂ SO _x ≤ 1 gr S/100 scf
40 CFR 72.6	Title IV Acid Rain Facility	CEM system will be designed to meet 40 CFR 75 CEM monitoring requirements
Reg XIV - 40 CFR 70	Title V permit requirement	All facilities subject to Title IV are automatically subject to Title V permit program
1200 – Toxics NSR	Toxic Air Contaminants	Complies (see Note 3).

Notes:

- 1) BACT is applied for all pollutants: SCR for NO_x, oxidation catalyst and good combustion controls for CO and VOC, CPUC quality pipeline natural gas for PM₁₀ and SO_x.
- 2) Fuel is CPUC quality pipeline natural gas.
- 3) See “AQIA and Rule 1200 Compliance Evaluation Section” for discussion of health risk assessment results and model inputs.

VIII. AB3205 Compliance (Building Permits/Public Notice)

Yes - Equipment/process has the potential to emit a hazardous compound as identified either by the ARB list of hazardous compounds or by the District

Yes - Proposed project is an increase in hazardous compound emissions.

No - Source is not located within 1,000 feet of a school. See Thomas Guide Map and Health Risk Assessment/Sensitive Receptor Identification.

IX. Rule 1200 Review

Yes - Equipment/process requires a Health Risk Assessment pursuant to Rule 1200.

**PRATT & WHITNEY FT-8 TWIN PAC REGULATORY EVALUATION
CALPEAK LONESTAR No. 4 SITE**

Yes - Operation of this equipment will result in an increase in emissions of toxic air contaminants listed in Rule 1200's tables I, II, & III. See Health Risk Assessment results.

X. Permit Conditions/Enforceability/Source Testing

- Permit conditions may require additional enforcement practices for this source type.
- Permit conditions will be reviewed with Enforcement (Chief or Inspector III).
- Continuous monitoring of the FT-8 will be necessary to ensure on-going compliance.
- Written recommendation will be provided to enforcement on the type and frequency of compliance testing.

XI. AB2588 (Toxic Hot Spots)

- Source will be subject to AB2588.
- Source will comply with those requirements when necessary.
- Source has potential to emit greater than 10 tpy of NO_x or PM₁₀

XII. Title IV – Acid Rain Requirements

- Source is subject to 40 CFR 72 (Acid Rain) provisions of Clean Air Act.
- Source NO_x CEM will comply with 40 CFR 75.
- Source will purchase SO₂ allowances.
- Source will prepare CEM monitoring plan.

XIII. Title V Operating Permit

- All sources subject to Title IV are automatically subject to Title V.
- A Title V operating permit application will be submitted within one year of initiating commercial operation.

Emission Estimates:
FT-8 Dry Low NO_x Combustor

FT8 Twin Pac (DLN)
Estimated Performance and Emissions - without SCR or CO oxidation catalyst

								With Fogging - 90%			
% Load	%	100	75	100	75	100	75	100	75	100	75
Ambient Temp.	Deg F	59	59	80	80	100	100	80	80	100	100
Altitude	Feet	0	0	0	0	0	0	0	0	0	0
Inlet Loss	in. H2O	3	3	3	3	3	3	3	3	3	3
Exhaust Loss	in. H2O	16	16	16	16	16	16	16	16	16	16
Rel. Humidity	%	60	60	60	60	60	60	60	60	60	60
Inlet Temp.	Deg F	59	59	80	80	100	100	70.6	70.6	88.3	88.3
Gross Output	kW	49275	36958	44136	33108	39966	29980	46702	35026	42880	32160
Power Island Aux.	kW	155	155	155	155	155	155	162	162	162	162
Net Output	kW	49120	36803	43981	32953	39811	29825	46540	34864	42718	31998
Gross Heat Rate	Btu/kWh	9186	10142	9510	10554	9848	10981	9357	10359	9641	10716
Net Heat Rate	Btu/kWh	9215	10185	9544	10604	9886	11038	9390	10407	9678	10770
Fuel LHV	BTU/lb	20670	20670	20670	20670	20670	20670	20670	20670	20670	20670
Fuel Flow per GT	PPH	10944	9063	10148	8448	9516	7960	10566	8773	9996	8332
NOx	ppmvd*	39	39	39	39	39	39	39	39	39	39
	PPH per GT	40.1	33.2	37.2	30.9	34.9	29.2	38.7	32.2	36.6	30.5
CO	ppmvd*	25	340	25	340	25	340	25	340	25	340
	PPH per GT	15.7	176.3	14.5	164.3	13.6	154.8	15.1	170.7	14.3	162.1
VOC	ppmvd*	6	25	6	25	6	25	6	25	6	25
	PPH per GT	2.2	7.4	2.0	6.9	1.9	6.5	2.1	7.2	2.0	6.8
Stack Exit Flow	PPS per GT	235.2	219.3	219.7	205.5	206.4	193.7	225.9	210.8	213.4	199.7
Stack Exit Temp	Deg F	729	692	753	717	777	741	747	711	769	734
<u>Exhaust Comp.</u>											
N2	Vol %	75.61	75.78	74.82	74.98	73.45	73.61	74.59	74.77	73.18	73.35
Ar	Vol %	0.90	0.90	0.89	0.89	0.87	0.87	0.89	0.89	0.87	0.87
CO2	Vol %	2.28	2.03	2.25	2.01	2.24	2.00	2.28	2.03	2.26	2.02
H2O	Vol %	5.35	4.86	6.34	5.87	8.07	7.61	6.65	6.16	8.44	7.97
O2	Vol %	15.86	16.4	15.7	16.22	15.37	15.88	15.59	16.12	15.24	15.75

* referenced to 15%O2

Does not reflect any plant aux loads other than those associated with the gas turbine power island.

Gas Compressor or transformer losses not included.

12/8/00

BACT Evaluation

BACT EVALUATION

Best Available Control Technology Evaluation Procedure

This Best Available Control Technology (BACT) evaluation has been prepared in fulfillment of the current San Diego Air Pollution Control District (District) Regulation II, Rules 20.1 through 20.9, New Source Review (NSR). This BACT evaluation addresses control of NO_x, VOC, PM₁₀ and SO₂ emissions from a proposed limited use simple cycle gas turbine installation with an electric generating capacity of slightly less than 50 MW.

A “top down” approach is used in this BACT analysis, following the guideline provided to all U.S. EPA regional administrators in December 1987:

“The first step in this approach is to determine, for the emission source in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.”

The proposed simple-cycle Pratt & Whitney FT-8 Twin Pac installation meets or exceeds *the most stringent control available for a similar or identical source or source category* for all criteria pollutants as defined in California Air Resources Board (ARB) September 2000 BACT Guidelines for gas turbine power plants greater than 50 MW (see Table 1). For this reason the annualized cost of alternative control options will not be evaluated in this BACT discussion.

Table 1. 1999 ARB NO_x, CO, VOC, PM₁₀, and SO₂ BACT Guidelines

Pollutant	Simple Cycle	Combined Cycle
NO _x	5.0 ppm (3-hr avg) with SCR	2.0 ppm (3-hr avg) with at least SCR, <u>or</u> 2.5 ppm (1-hr avg) with at least SCR
CO	6.0 ppm (3-hr avg) with an oxidation catalyst	6.0 ppm (3-hr avg) with an oxidation catalyst
VOC	2.0 ppm (3-hr avg) <u>or</u> 0.0027 lbs/MMBtu (HHV)	2.0 ppm (1-hr avg) per vendor guarantee or with addition of oxidation catalyst
SO _x	Emission limit corresponding to natural gas sulfur content ≤ 1 gr/100 scf (≤ 0.55 ppm) as supplied by a regulated entity	Emission limit corresponding to natural gas sulfur content ≤ 1 gr/100 scf (≤ 0.55 ppm) as supplied by a regulated entity
PM ₁₀	Emission limit corresponding to natural gas sulfur content ≤ 1 gr/100 scf as supplied by a regulated entity	Emission limit corresponding to natural gas sulfur content ≤ 1 gr/100 scf as supplied by a regulated entity
NH ₃ slip	5.0 ppm when ammonia is used.	5.0 ppm when ammonia is used.

BACT EVALUATION

The proposed limit for NH₃ slip is 10 ppm. There are no BACT cost ceiling guidelines for NH₃ at this time. For this reason no control cost evaluation of options to reduce NH₃ slip to 5 ppm or less are included in this BACT discussion.

Introduction

CalPeak Power (CPP) proposes to install one 49.5 MW FT-8 Twin Pac turbine/generator adjacent to the SDGE Border substation. The simple cycle FT-8 Twin Pac will be equipped with dry low NO_x combustor technology to achieve a 39 ppm NO_x level at the combustor outlet. An end-of-pipe NO_x control technology, Selective Catalytic Reduction (SCR), is proposed to reduce outlet NO_x emissions from the proposed FT-8 Twin Pac to 2 ppm (annual average of hours operated), 2.5 ppm (24-hour average), and 3.0 ppm (3-hour average). Start-up and shutdown periods are not included in the NO_x emission limit averages. The reason for a 3.0 ppm 3-hour average NO_x limit is to account for SCR temperature and outlet NO_x emission stabilization following a cold turbine start-up. Up to one start-up/shutdown cycle per day is estimated for this installation. 19.5 percent aqueous ammonia will be the reagent supplied to the SCR. Annual NO_x emissions from the site will be less than 25 tons per year (tpy).

A carbon monoxide (CO) oxidation catalyst will be utilized to reduce uncontrolled CO emissions from 80 ppm to 6 ppm. Annual CO emissions from the site will be less than 50 tons per year (tpy). The purpose of the installation will be to provide additional power to the grid during periods of high electricity demand.

BACT Analysis Regulatory Requirements

Federal PSD Permit Application Criteria Pollutant Trigger Levels

The criteria pollutant emission levels that triggers a Federal “new major stationary source” PSD permit application requirement is either 100 tons/year (tpy) for any of the 28 source categories specified in 40 CFR 52.21 or 250 tpy for all other source types. Simple cycle gas turbine power plants are not among the 28 source categories listed in 40 CFR 52.21. Major modifications to a major source stationary source trigger PSD requirements if the proposed project net emissions are as follows: 15 tpy for PM₁₀, 40 tpy for VOC, 40 tpy for NO_x, 40 tpy for SO₂, and 100 tpy for CO. A BACT analysis is required for a pollutant that triggers the PSD permit application requirement. The emissions levels from the proposed gas turbine installation will not trigger Federal PSD review requirements for any pollutant.

San Diego APCD New Source Review (NSR) Requirements

The purpose of the District NSR rule is to establish pre-construction review requirements for new and modified stationary sources of air pollution: 1) to determine the need for BACT, 2) to determine the need to analyze air quality impacts, and 3) to ensure that the operation of such sources does not interfere with the attainment or maintenance of ambient air quality standards. The NSR rule also states that emissions of non-attainment pollutants from major modifications to major stationary sources must

BACT EVALUATION

be offset. San Diego County is a federal non-attainment area for ozone and a California non-attainment area for ozone. Ozone precursors are VOC and NO_x. San Diego County is also a California non-attainment area for PM₁₀, VOC, and NO_x.

The District requires that BACT be applied to any new emissions unit that results in a potential to emit greater than or equal to 10 lbs/day for NO_x, VOC, PM₁₀, and SO₂. As a result, the emissions associated with the proposed gas turbine power plant trigger San Diego County NSR review for NO_x, VOC, PM₁₀, SO₂. Ammonia slip will be minimized to ensure minimal adverse impact.

The District defines BACT as the most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such emission unit, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that such limitations are not achievable. BACT is also defined as any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost effective by the APCO. The proposed simple-cycle FT-8 installation will meet the NO_x, CO, VOC, PM₁₀, and SO₂ BACT guidelines recommended by the ARB for combined-cycle turbines subject to California Energy Commission (CEC) authority. The CEC has jurisdiction over power plants with a rated power output of 50 MW or more.

The 1999 ARB turbine BACT guidelines recommend a BACT NO_x control level of 2 ppm for baseload combined-cycle plants and 5 ppm for simple cycle turbines. The 2 ppm annual average hourly NO_x emission limit, 2.5 ppm 24-hour limit, and 3.0 ppm 3-hour limit proposed for the FT-8 Twin Pac in this application will be the lowest NO_x emission levels permitted in the U.S. on a simple-cycle gas turbine to date. CPP is proposing a NO_x level for the simple-cycle FT-8 Twin Pac that is equivalent to current ARB BACT guidelines for a combined-cycle plant to ensure that the FT-8 will not be subject to “hour per day” or “hour per year” operating restrictions.

Baseline Emission Rate

The baseline emission rate represents a “realistic scenario of upper bound controlled emissions for the source.” All new turbines manufactured in the U.S. in the last decade have been equipped with “dry low NO_x (DLN)” combustors or water injection to reduce NO_x formation in the turbine combustor. The FT-8 DLN combustor has a guaranteed NO_x emission rate of 39 ppm. SCR will be used to reduce NO_x emissions from the simple-cycle FT-8 Twin Pac to 2 ppm.

Annualized Cost of the Each Control Option

The approximate capital cost of the SCR is \$1,600,000. The estimated approximate annualized cost of the SCR is \$1,000,000/year, including amortized capital and installation costs, O&M and CEM related costs. The NO_x reduction achieved by the SCR at the uncontrolled NO_x “potential to emit” level of 39 ppm at 8,760 hour/year will be approximately 333 tons per year (tpy). The NO_x control cost effectiveness at PTE conditions is approximately \$3,000/ton.

BACT EVALUATION

The approximate capital cost of the CO catalyst is \$400,000. The estimated approximate annualized cost of the SCR is \$120,000/year. The CO reduction achieved by the CO catalyst at the uncontrolled CO “potential to emit” level of 80 ppm at 8,760 hour/year will be approximately 422 tpy. The CO control cost effectiveness at PTE conditions is approximately \$300/ton.

It is important to note that the relatively low CO control cost effectiveness is due primarily to the fact that a CO catalyst frame is already designed into the SCR housing. As a result, the cost of constructing and erecting the CO catalyst housing is already incorporated in the SCR capital cost.

AQIA and Rule 1200 Compliance Evaluation

Air Quality Impact Analysis and Rule 1200 Evaluation

Prepared for:

CalPeak Power, LLC
CalPeak Lonestar No. 4 Site

SRA **Scientific Resources Associated**

927 Wilbur, Suite 1
San Diego, CA 92109

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1.0 INTRODUCTION

As described in the Equipment Description, CalPeak Power, LLC (CalPeak) is proposing to construct a Pratt & Whitney FT-8 Twin Pac simple-cycle, natural gas-fired peaking unit at an undeveloped site on Otay Mesa near the U.S.-Mexican border. The rated electric power output for the Twin Pac unit is 49.5 MW. The AQIA and Rule 1200 evaluations are based on the assumption that the project will operate for 8760 hours per year, and natural gas will be the only fuel used in the turbine. The purpose of the new gas turbine will be to generate electricity for sale on the California Independent System Operator (CalISO) grid.

According to Rule 20.3, New Source Review, an AQIA is required for new or modified facilities that result in an emissions increase above the AQIA trigger levels in Table 20.3-1, as shown below:

Table 1
Rule 20.3
AQIA Trigger Levels

Air Contaminant	Trigger Levels		
	lb/hr	lb/day	tons/yr
Particulate Matter (PM10)	--	100	15
Oxides of Nitrogen (NOx)	25	250	40
Oxides of Sulfur (SOx)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	--	3.2	0.6

Emission estimates for the FT-8 Twin Pac turbines were provided by Pratt & Whitney. For the purpose of conducting the AQIA, it was conservatively assumed that the unit will be equipped with an SCR that will control NOx emissions to no more than 5 ppm at 15% O₂. Actual proposed NOx emission limits are: 2.0 ppm (annual average of hours operated), 2.5 ppm (24-hour average), and 3.0 ppm (3-hour average). As the BACT analysis indicates, the unit will also be equipped with an oxidation catalyst with a guaranteed emission rate for CO of 6 ppm at 15% O₂. The oxidation catalyst will also reduce emissions of VOCs. In addition, natural gas firing and efficient combustion practices will be used to minimize PM10, SOx, and VOC emissions. Based on these assumptions for the emission estimates, the annual emissions of NOx are above the AQIA trigger level, and an AQIA is therefore required for NOx. The emission estimates are shown in Table 2 below.

Table 2
Emission Estimates
FT-8 Twin Pac

Air Contaminant	Emissions			AQIA Triggered?
	lb/hr	lb/day	tons/yr	
Particulate Matter (PM10)	3.33	79.9	14.6	No
Oxides of Nitrogen (NOx)	10.3	247.2	45.11	Yes
Oxides of Sulfur (SOx)	1.70	40.8	7.4	No
Carbon Monoxide (CO)	7.54	181.0	33.0	No
Lead and Lead Compounds	N/A	N/A	N/A	N/A

In addition to the evaluation of the potential impacts with controlled emissions, the San Diego Air Pollution Control District has also requested that CalPeak evaluate the potential impacts with uncontrolled emissions. Based on emission estimates for uncontrolled emissions, the requirement for an AQIA will be triggered for NOx and CO.

Because the requirement for an AQIA is triggered by the NOx emissions on a basis of 5 ppmv NOx, and for NOx and CO emissions under an uncontrolled operational scenario, an AQIA has been performed for NO₂ and CO to demonstrate that the proposed project will not:

- (A) cause a violation of a state or national ambient air quality standard anywhere that does not already exceed such standard, nor
- (B) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor
- (C) cause additional violations of a state ambient air quality standard anywhere the standard is already being exceeded, except as provided for in Subsection (d)(2)(v), nor
- (D) prevent or interfere with the attainment or maintenance of any state or national ambient air quality standard.

The relevant ambient air quality standards are shown in Table 3 below.

Table 3
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
O ₃	1 Hour	180	235	235
CO	8 Hour	10,000	10,000	
	1 Hour	23,000	40,000	
NO ₂	Annual Average		100	100
	1 Hour	470		
SO ₂	Annual Average		80	
	24 Hour	105	365	
	3 Hour			1,300
	1 Hour	655		
PM ₁₀	Annual Geometric Mean	30		
	24 Hour	50	150	150
	Annual Arithmetic Mean		50	50
	24 Hour	25		
Sulfates	24 Hour	25		
Pb	30-Day Average Calendar Quarter	1.5		
			1.5	1.5
Hydrogen Sulfide	1 Hour	42		
Vinyl Chloride	24 Hour	26		
Visibility Reducing Particles	8 Hour	Extinction Coefficient > 0.23 per kilometer		

In addition to conducting an AQIA, in accordance with the requirements of San Diego APCD Rule 1200, the facility must demonstrate that the increase in maximum incremental cancer risk at every receptor location is equal to or less than one in one million for any project for which new, relocated, or modified emission units that increases maximum incremental cancer risk are not equipped with T-BACT; or the

increase in maximum incremental cancer risk at every receptor location is equal to or less than ten in one million provided the emission units are equipped with T-BACT. Furthermore, the provisions of Rule 1200 require that the increase in the total acute noncancer health hazard index at every receptor must be equal to or less than one, and that the total chronic noncancer health hazard index at every receptor must be equal to or less than one, unless the Air Pollution Control Officer determines that an alternate total hazard index is sufficiently health protective.

The following sections present the background ambient air quality and attainment status with regard to NO₂ and CO; the meteorological data and a discussion of its representativeness for the Lonestar site; the results of the ambient air quality analysis, including a discussion of the approach in conducting the analysis; and the results of the Rule 1200 health risk analysis.

2.0 BACKGROUND AMBIENT AIR QUALITY

According to the requirements for conducting an AQIA, the initial step is to ascertain the existing background ambient air quality for the pollutants that are to be considered in the AQIA. The nearest monitoring station to the Lonestar facility is the Otay Mesa-Paseo International monitoring station. However, the San Diego Air Pollution Control District recommends the use of Chula Vista monitoring data to represent the background ambient air quality, as the Otay Mesa monitoring station is located directly at the international border crossing and is influenced by vehicular emissions. Table 4 presents the NO₂ and CO background ambient air quality for 1997-1999 for the Chula Vista monitoring station.

Table 4
Highest Background Ambient Air Quality
(micrograms/cubic meter)

Monitoring Station	1997	1998	1999	CAAQS	NAAQS
Nitrogen Dioxide					
1-Hour					
Chula Vista	205	195	190	470	N/A
Annual Average					
Chula Vista	36	34	36	N/A	100
Carbon Dioxide					
1-Hour					
Chula Vista	6171	4685	6171	23,000	40,000
8-Hour					
Chula Vista	3429	3085	4342	10,000	10,000

The background ambient air quality data indicate that the San Diego Air Basin is currently attaining the National Ambient Air Quality Standard (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for NO₂ and CO.

3.0 METEOROLOGICAL DATA

The CalPeak Lonestar site is located on Otay Mesa south of Otay Mesa Road and just east of Harvest Road. The climate of the site, and all of San Diego, is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. Because of the site's inland location, surface meteorological data collected at the Marine Corps Air Station (MCAS) Miramar site were used to conduct the air quality impact analysis. Upper air data from MCAS Miramar were used for the mixing height, as Miramar is the closest upper air station at which mixing heights are measured.

Figure 1 presents a wind rose from MCAS Miramar. The wind rose indicates the general wind direction at the site. Three sequential years of meteorological data (1992 through 1994) were used in the air dispersion modeling. Because the meteorological data do not vary substantially from year to year, the data were considered to be representative of meteorological conditions at the site.

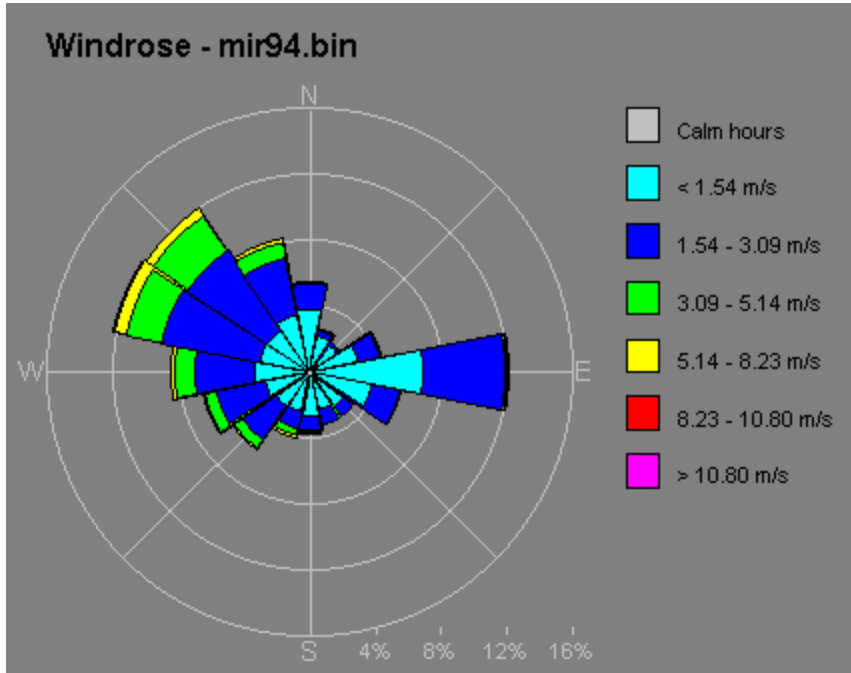


Figure 1. Wind Rose – MCAS Miramar

4.0 AIR QUALITY IMPACT ANALYSIS

This section presents the results of the AQIA that was conducted to demonstrate that the proposed project would not cause or contribute to a violation of an ambient air quality standard.

4.1 Modeling Approach and Assumptions

Table 5 presents the stack parameters for the FT-8 Twin Pac that were used in the AQIA, and the modeling parameters for the proposed project. For the purpose of conducting the AQIA, the worst case operating scenario for NO_x emissions was chosen to evaluate the maximum potential impacts associated with the facility's operations.

Table 5
Stack Parameters
CalPeak Lonestar No. 4 Facility

Parameter	Value
Average High Heating Value of Fuel	1,020 BTU/SCF
Stack Height	50 feet minimum
Stack Diameter	12 feet
Stack Exit Temperature	700 F
Stack Exit Volumetric Flow	786,547 ACFM
Stack Exit Velocity	115.91 ft/s
Fuel Flow	0.492 MSCF/hr

The Industrial Source Complex Short Term 3 (ISCST3) model, version 10100, was used for the AQIA. The ISCST3 model receptor grid was set up as follows: 50-meter spacing along the property boundary and from the facility boundary to 200-meter distance; 100-meter spacing from 200 meters to 1 kilometer; and 200-meter spacing from 1 kilometer to 5 kilometers. The receptor grid was sufficiently large to include areas of high terrain, including higher elevations east of Otay Mesa. In addition, a 50-meter grid was sited where the initial modeling effort indicated the maximum impacts would be predicted. Table 6 presents the ISCST3 model option settings that were used in the modeling effort.

Table 6
ISCST3 Model Option Settings

Model Option	Setting
Model Calculates	Concentration
Receptor Grid System	Cartesian
Terrain Elevations Read	Yes
Calm Processing Used	Yes
Dispersion Coefficients	Rural
Stack Tip Downwash	Yes
Gradual Plume Rise	Yes
Buoyancy-Induced Dispersion	Yes
Wind Profile Exponent Values	Default
Vertical Potential Temperature Gradient	Default
Building Downwash	Included

Because the site is located in a developed area, rural dispersion coefficients were appropriate for the proposed facility. A review of land use within 3 km of the site indicates that less than 50% of the area is developed, and therefore the area would not experience urban effects.

Building downwash was taken into account using the USEPA's BPIP model (USEPA 1995) which is the most recent version of the building downwash model available. In accordance with USEPA guidelines, building downwash must be considered if the stack heights are less than "Good Engineering Practice" (GEP) heights. GEP heights can be calculated by the following equation:

$$H_s = H_b + 1.5L$$

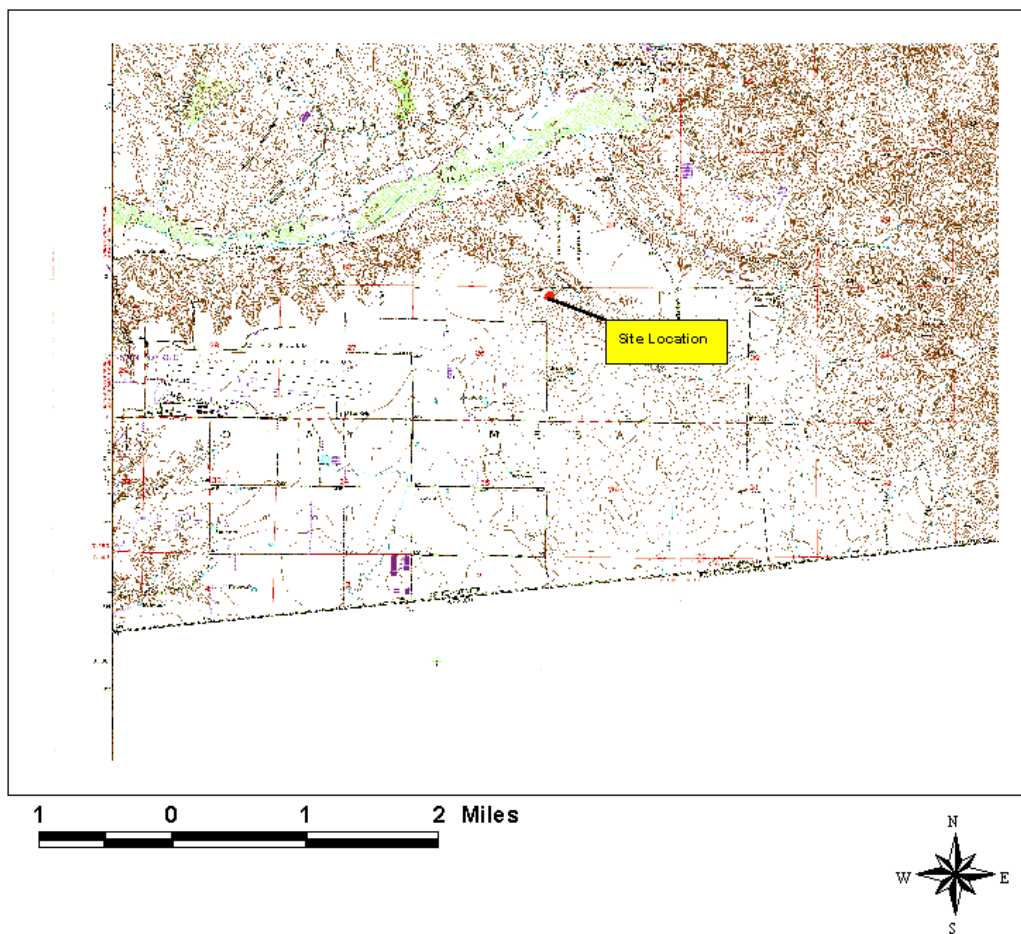
Where

$$\begin{aligned} H_s &= \text{GEP stack height} \\ H_b &= \text{building height} \\ L &= \text{lowest of building height, width, or length} \end{aligned}$$

The GEP formula indicates whether emissions from a stack will be affected by downwash associated with nearby buildings. Building dimensions were obtained from the existing facility, surrounding buildings, and Pratt & Whitney information regarding the turbine housing and configuration. The facility location is shown in Figure 2. The proposed minimum stack height of 52.5 feet is below the GEP stack height, and building downwash must be considered.

In accordance with USEPA guidelines, all buildings within 5L should be included in the building downwash modeling, where L = the lesser of the building width and length. Because the SCR housing would dominate any downwash effects expected, the SCR

housing was the only structure that was included in the modeling analysis. The other structures on or near the stack would be small support structures that would not exceed 1 story in height. The SCR housing was assumed to be a rectangular structure with dimensions 14 ft. wide X 67 ft. long X 42 ft. high.



CalPeak Lonestar No. 4 Site Facility Location

SRA Scientific Resources Associated

Figure 2

4.2 Model Results

This section presents the results of the AQIA for NO₂ and CO as required under Rule 20.3.

To evaluate compliance with the ambient air quality standards, NO₂ impacts were modeled for 1-hour and annual averaging times. CO impacts were modeled for 1-hour and 8-hour averaging times. Table 7 presents the results of the AQIA for operational impacts for the FT-8 Twin Pac. The maximum predicted concentrations of NO₂ and CO were added to the highest ambient background NO₂ and CO concentrations, respectively, to obtain an estimate of the maximum impacted predicted. As shown in the table, all impacts are below the CAAQS and NAAQS. Therefore, the AQIA indicates that the project will comply with the requirements of Rule 20.3.

Table 7
AQIA Modeling Results
µg/m³

Pollutant	Averaging Time	Maximum Predicted Impact ¹	Impact + Background ²	NAAQS	CAAQS
Controlled, 5 ppm NOx					
NO ₂	Annual	0.04	35.7	100	
	1 Hour	8.08	212.8		470
Uncontrolled					
NO ₂	Annual	0.32	36.0	100	
	1 Hour	62.88	267.6		470
Uncontrolled³					
CO	8 Hour	102.6	4,445	10,000	10,000
	1 Hour ⁴	276.5	6,448	40,000	23,000

¹Default ARM of 0.75 assumed for annual impacts to account for ozone-limited conversion of NO to NO₂.

²Maximum background concentration from 1997-1999 for the Chula Vista monitoring station.

³Based on worst-case uncontrolled emissions at 75% load.

⁴Maximum background concentration from 1997-1999 for the Chula Vista monitoring station.

5.0 RULE 1200 EVALUATION

Under the requirements of San Diego APCD Rule 1200, new sources must demonstrate that emissions of toxic air contaminants (TACs) do not exceed specified health risk limits at all off-site receptor locations where the public may be exposed to the emissions. The locations of concern include residences, businesses, schools, day care centers, hospitals, government facilities, retirement homes or any location where public access is possible. Rule 1200 requires an evaluation of both cancer and noncancer chronic health risks, and of acute noncancer risks. Rule 1200 requires that the excess cancer risks associated with facility TAC emissions are less than one in one million without implementation of toxics best available control technology (TBACT), and less than ten in one million with implementation of TBACT. Rule 1200 also requires that the noncancer hazard indices for both chronic and acute noncancer risks be below 1.0.

To determine whether the proposed project would be in compliance with the requirements of Rule 1200, a health risk evaluation of TAC emissions from the project was conducted. The first step in the evaluation was to estimate emissions of TACs from the project's operations. The second step in the evaluation was to estimate the maximum impacts associated with TAC emissions using air quality modeling. The final step in the evaluation was to compare the estimated health risks associated with exposure to the maximum concentrations of TACs predicted for the project's operations.

5.1 Toxic Air Contaminant Emission Estimates

The FT-8 Twin Pac proposed for the CalPeak Lonestar facility will be fired exclusively with natural gas. TAC emission factors for gas turbines were obtained by reviewing relevant databases for turbines firing natural gas. In accordance with San Diego APCD guidance for simple-cycle gas turbines with SCR, impacts associated with ammonia and organic compounds are required to be evaluated.

To estimate emissions of organic compounds from natural gas combustion, the U.S. EPA's AP-42 emission factors (AP-42, Section 3.1, Stationary Gas Turbines, Table 3.1-3) were used. For PAHs, discussions with the San Joaquin Valley Unified Air Pollution Control District indicate that the PAH factor published by the EPA includes naphthalene. Because naphthalene is noncarcinogenic, the naphthalene portion of the PAHs (from the EPA's AP-42 emission factors, which were derived from the same source test data as the general PAH emission factor) was subtracted from the PAH emission factor. Source test data has been requested from the San Joaquin Valley Unified Air Pollution Control District and will be forwarded to the District upon receipt. Furthermore, the emission factors from AP-42 are conservative because they are for natural gas combustion in uncontrolled turbines. The turbines will be equipped with SCR and an oxidation catalyst. The oxidation catalyst will reduce the emissions of all organic compounds as well as CO and VOCs. An emission estimate for ammonia was calculated assuming 10 ppm slip from SCR and project heat rate conditions at 100% operating capacity.

Table 8
Toxic Air Contaminant Emissions

TAC	Emission Factor, lb/MMBTU	Maximum Hourly Emissions, lbs/hr	Maximum Hourly Emissions, g/s	Annual Emissions, lbs/yr	Annual Emissions, g/s
Ammonia	10 ppm slip	7.6	0.958	6.6E+04	0.958
Acetaldehyde	4.0E-05	2.01E-02	2.53E-03	176	2.53E-03
Acrolein	6.4E-06	3.2E-02	4.05E-04	28.2	4.05E-04
Benzene	1.2E-05	6.03E-03	7.59E-04	52.8	7.59E-04
1,3-Butadiene	4.3E-07	2.16E-04	2.72E-05	1.89	2.72E-05
Ethylbenzene	3.2E-05	1.61E-02	2.02E-03	141	2.02E-03
Formaldehyde	7.1E-04	3.56E-01	4.49E-02	3,120	4.49E-02
Naphthalene	1.3E-06	6.53E-04	8.22E-05	5.72	8.22E-05
PAHs	9.0E-07	4.52E-04	5.69E-05	3.96	5.69E-05
Propylene Oxide	2.9E-05	1.46E-02	1.83E-03	128	1.83E-03
Toluene	1.3E-04	6.53E-02	8.22E-03	572	8.22E-03
Xylenes	6.4E-05	3.21E-02	4.05E-03	282	4.05E-03

5.2 Health Risk Assessment

To estimate the potential health risks associated with exposure to TACs emitted from the project, it was first necessary to estimate the concentrations of TACs at the maximum impact point. The approach used to estimate maximum concentrations is the same as the approach that was used to conduct the air dispersion modeling for the AQIA, and is described in Section 4 above.

The source emission rate in the ISCST3 model was assumed to be 1 gm/sec. As a result, for each source, model predicted concentrations at each receptor location is a dilution factor, X/Q (chi over Q), or a predicted concentration per 1 gm/sec of emission. For each TAC, cancer risk is the annual average TAC emission rate multiplied by the X/Q , the cancer unit risk factor. For multipathway pollutants (in this case, PAHs), a multipathway factor was included in the risk calculations to account for the potential for multipathway health effects (i.e., effects due to oral exposure and routes other than inhalation). For conservative purposes, the multipathway factor recommended by Tom Weeks of the San Diego Air Pollution Control District for benzo(a)pyrene was used to estimate multipathway effects from all PAHs. The multipathway factor is 7.12, and is multiplied by the inhalation excess cancer risk to estimate a total risk due to exposure to PAHs. The chronic HI is the annual average TAC emission rate multiplied by the X/Q , then divided by the chronic REL. The acute HI is the maximum one-hour TAC emission rate multiplied by the X/Q , then divided by the acute REL.

The cancer unit risk factors (URF) and noncancer reference exposure levels (RELs) were obtained from the most recent-approved values released by the California Office of

Environmental Health Hazard Assessment (OEHHA) in February 1999 (acute RELs), June 1999 (URFs), and May 2000 (chronic RELs). Table 9 presents a summary of the TACs and their corresponding toxicity factors and target organ systems for noncancer risks.

Table 9
Toxicity Values
Toxic Air Contaminants

TAC	URF, ($\mu\text{g}/\text{m}^3$)⁻¹	Chronic REL, $\mu\text{g}/\text{m}^3$	Chronic Target Organ(s)¹	Acute REL, $\mu\text{g}/\text{m}^3$	Acute Target Organ(s)¹
Ammonia	N/A	200	RES	3200	RES
Acetaldehyde	2.7E-06	9	RES	N/A	
Acrolein	N/A	2.0E-02		0.19	RES, EYE
Benzene	2.9E-05	200	CNS, REP, CV	3200	REP
1,3-Butadiene	1.7E-04	N/A		N/A	
Ethylbenzene	N/A	2000	REP, LIV, KID	N/A	
Formaldehyde	6.00E-06	3	RES, EYE	94	RES, EYE
Naphthalene	N/A	9	RES	N/A	
PAHs	1.7E-03	N/A		N/A	
Propylene Oxide	3.7E-06	30	RES	3100	RES, EYE
Toluene	N/A	300	CNS, RES, REP	37000	CNS, RES
Xylenes	N/A	700	CNS, RES	22000	RES, EYE

¹RES=respiratory system; CV=cardiovascular system; CNS=central nervous system; IMM=immunological system; KID=kidney; LIV=liver, alimentary system; REP=reproductive system, developmental system; EYE=eyes; SK=skin

To be conservative, the maximum annual average and maximum hourly concentrations at any receptor location (grid or fence line) due to emissions from the turbine were selected as the location of the point of maximum impact or maximum exposed individual (MEI). The selection was made without considering whether anyone actually lives or works at that location. Health risk calculations were conducted for the MEI to determine whether the estimated health risks are below the Rule 1200 criteria for acceptable risks. For conservative purposes, the excess cancer risks and hazard quotients calculated for individual pollutants were summed over all pollutants regardless of toxic endpoint.

The health risk modeling results indicated that the risks were below the Rule 1200 criteria for excess cancer risks, chronic noncancer risks, and acute noncancer risks. The results of the health risk evaluation are presented in Table 10. The excess cancer risks based on the emission factors from AP-42 and the conservative assumptions inherent in the emission estimate for uncontrolled sources as well as the use of the multipathway factor for benzo(a)pyrene to represent the multipathway health effects of all PAHs leads to the conclusion that the excess cancer risks are likely overestimated. The risks presented in Table 10 are based on 8760 hours of operation per year.

Table 10
Results of Health Risk Calculations

	Risk Estimate	Rule 1200 Criterion	Above Criterion?
Excess Cancer Risk	0.042 in 1 million	1 in 1 million	No
Chronic HI	0.0017	1	No
Acute HI	0.018	1	No

As shown in Table 10, the risks associated with emissions from the CalPeak Lonestar No. 4 facility are below the Rule 1200 thresholds for uncontrolled sources to utilize TBACT. Therefore, the project will be in compliance with Rule 1200 and no further controls are required.

CalPeak Lonestar No. 4

Case: SCR, 50 foot stack, Single turbine stack

Turbine Output (MW):	49.275
Heat Rate (Btu/kwh):	10190
BTU/hr	502112250
Btu/cf Conversion	1000
Turbine Rating at 100% load (MMcf/hr):	0.492
Annual Operating Hours:	8760
Max. 1-Hr. X/Q	6.22
Max. Annual Avg. X/Q	0.04161

Substance	Emission Factor (lb/MMBTU)	Emission Rates				Max. 1-Hour (ug/m3)	Max. Ann. Conc. (ug/m3)	Cancer Inh URF (ug/m3)-1	Cancer MPF	Chronic Inh REL (ug/m3)	Chronic MPF	Acute REL (ug/m3)	Acute REL Avg. Time (hrs)	Maximum		
		Hourly		Annual										Cancer Risk	Chronic HI	Acute HI
		(lb/hr)	(g/sec)	(lb/yr)	(g/sec)											
Acetaldehyde	4.00E-05	2.01E-02	2.53E-03	1.76E+02	2.53E-03	1.57E-02	1.05E-04	2.70E-06	1	9.00E+00	1	n/a	n/a	2.84E-10	1.17E-05	n/a
Acrolein	6.40E-06	3.21E-03	4.05E-04	2.82E+01	4.05E-04	2.52E-03	1.68E-05	n/a	n/a	2.00E-02	1	1.90E-01	1	n/a	8.42E-04	1.33E-02
Ammonia	1.54E+01	7.60E+00	9.58E-01	6.66E+04	9.58E-01	5.96E+00	3.98E-02	n/a	n/a	2.00E+02	1	3.20E+03	1	n/a	1.99E-04	1.86E-03
Benzene	1.20E-05	6.03E-03	7.59E-04	5.28E+01	7.59E-04	4.72E-03	3.16E-05	2.90E-05	1	6.00E+01	1	1.30E+03	6	9.16E-10	5.26E-07	3.63E-06
1,3-Butadiene	4.30E-07	2.16E-04	2.72E-05	1.89E+00	2.72E-05	1.69E-04	1.13E-06	1.70E-04	1	n/a	n/a	n/a	n/a	1.92E-10	n/a	n/a
Ethylbenzene	3.20E-05	1.61E-02	2.02E-03	1.41E+02	2.02E-03	1.26E-02	8.42E-05	n/a	1	2.00E+03	1	n/a	n/a	n/a	4.21E-08	n/a
Formaldehyde	7.10E-04	3.56E-01	4.49E-02	3.12E+03	4.49E-02	2.80E-01	1.87E-03	6.00E-06	1	3.00E+00	1	9.40E+01	1	1.12E-08	6.23E-04	2.97E-03
Naphthalene	1.30E-06	6.53E-04	8.22E-05	5.72E+00	8.22E-05	5.12E-04	3.42E-06	n/a	n/a	9.00E+00	4.8	n/a	n/a	n/a	1.83E-06	n/a
PAHs	9.00E-07	4.52E-04	5.69E-05	3.96E+00	5.69E-05	3.54E-04	2.37E-06	1.70E-03	7.12	n/a	n/a	n/a	n/a	2.87E-08	n/a	n/a
Propylene Oxide	2.90E-05	1.46E-02	1.83E-03	1.28E+02	1.83E-03	1.14E-02	7.63E-05	3.70E-06	1	3.00E+01	1	3.10E+03	1	2.82E-10	2.54E-06	3.68E-06
Toluene	1.30E-04	6.53E-02	8.22E-03	5.72E+02	8.22E-03	5.12E-02	3.42E-04	n/a	n/a	3.00E+02	1	3.70E+04	1	n/a	1.14E-06	1.38E-06
Xylenes	6.40E-05	3.21E-02	4.05E-03	2.82E+02	4.05E-03	2.52E-02	1.68E-04	n/a	n/a	7.00E+02	1	2.20E+04	1	n/a	2.41E-07	1.15E-06
SUM														4.16E-08	1.683E-03	0.018
Exceed Thresholds??														NO	NO	NO
Max. hrs/yr increase:														8760	8760	n/a

- Formaldehyde emission factor from San Diego APCD. Ammonia emission factor assumes 10 ppm slip
- Other emission factors are from CATEF (turbine:cogen)
- Cancer URFs are final values currently accepted by OEHHA and APCD; chronic and acute REL values are those adopted by OEHHA in May 2000
- MPF factors are those provided by SDAPCD; MPF for PAHs is current value used by South Coast AQMD (to be conservative)
- Chronic and acute HI values summed across all target organs; results are conservative
- Maximum one-hour and annual impacts anywhere were selected

CalPeak Lonestar - Uncontrolled

AQIA for CO Emissions at 340 ppm CO

14-Jun-01

CO Emissions

Max. 1-Hour CO Emissions		Max. 8-Hour CO Emissions	
(lb/hr)	(g/sec)	(lb/hr)	(g/sec)
352.6	44.43	352.6	44.43

Maximum 1-hour CO Concentration

Max. 1-hr X/Q ¹	Max. Modeled CO 1-hr Conc. (mg/m ³)	CO 1-hour Concentration (mg/m ³)			CO 1-Hour Standard (mg/m ³)		Exceed Standard?
		Max. Modeled	Background ²	Total	California	Federal	
6.22	276.47	276.47	6171.0	6,447.5	23000	40000	NO

Maximum 8-hour CO Concentration

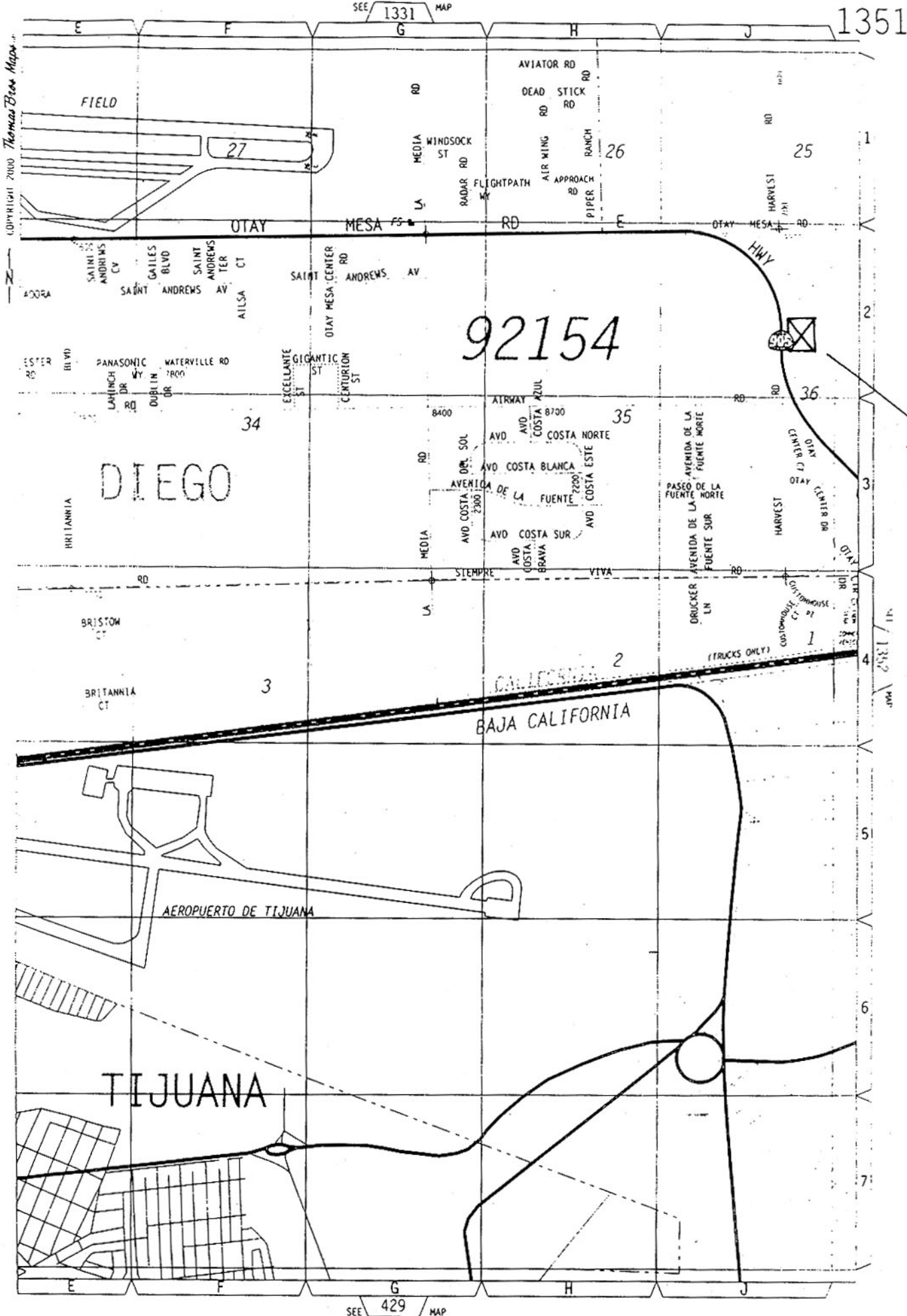
Max. 8-hr X/Q ¹	Max. Modeled CO 8-hr Conc. (mg/m ³)	CO 8-hour Concentration (mg/m ³)			CO 8-Hour Standard (mg/m ³)		Exceed Standard?
		Max. Modeled	Background ³	Total	California	Federal	
3.08	136.81	102.61	4342.0	4,444.6	10000	10000	NO

¹ Obtained from ISCST3 modeling

² Max. 1-hour value from Chula Vista station 1997-1999 SDAPCD website data

³ Max. 8-hour value from Chula Vista station 1997-1999 CARB website data

Thomas Guide Map and Plot Plan



SAN DIEGO CO.

MAP

The plot plan is not provided. A hard copy of the plot plan was submitted to the San Diego County Air Pollution Control District with the ATC Application.

APPENDIX H
DRAFT AUTHORITY TO CONSTRUCT

Month Day, 2001(*date issued*)

CHARLES C HINCKLEY PROJECT DIRECTOR
CALPEAK POWER LLC
701 B STREET SUITE 340
SAN DIEGO CA 92101 8197

After examination of your Application No. 976502 (CalPeak Power No. 4, Border) for an Air Pollution Control District Authority to Construct two simple cycle gas turbines with common generator & exhaust (the “Twin Pac”) at the intersection of Highway 905 and Harvest Road, (the “facility”), San Diego, California the District has decided on the following action:

Authority to Construct is granted pursuant to Rule 20 of the Air Pollution Control District Rules and Regulations for a:

Pratt & Whitney 49.5 MW (at ISO conditions) Model FT-8 (DLN) “Twin Pac” (two simple cycle gas turbines with common generator & exhaust), total 500 MM Btu/hr, natural gas fired, Peerless Manufacturing Company SCR (Haldor catalyst) and oxidation catalyst (Engelhard catalyst) system.

This Authority to Construct is granted with the following conditions:

(General Requirements)

1. The applicant shall provide access, facilities, utilities, and any necessary safety equipment for source testing and inspection upon the request of the Air Pollution Control District.
2. The Twin Pac shall be fired on Public Utility Commission (PUC) quality natural gas only. The applicant shall maintain, on-site, quarterly records of the natural gas sulfur content (grains of sulfur compounds per 100 dscf of natural gas) and the higher and lower heating values (Btu/scf) of the natural gas; and provide such records to District personnel upon request.
3. Permittee shall submit a complete Acid Rain permit application (including a *monitoring* plan) prior to commencement of construction *in accordance with* 40 CFR part 72 to the *EPA Administrator, and copy to the District.*
4. Sufficient SO₂ trading allowances will be purchased by the permittee to offset potential SO₂ emissions following the requirements described in 40 CFR 73. Permittee shall hold allowances, as of the allowance transfer deadline, in the facility’s (Department of Energy’s Office of Regulatory Information System “*ORIS*” *code for each unit, the Twin Pac is a “unit”*) compliance sub-account (after deductions under 40 CFR 73.34 (c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit.
5. All records required by this permit shall be kept on site for a minimum of five years and made available to District personnel upon request.

PRELIMINARY

6. Within one year of commencing commercial operation at the site, the plant operator shall submit a 40 CFR 70 permit application (Title V) to the District pursuant to District Regulation XIV. *(This reference to “commercial” operation and submitting a Title V permit application comes from the Title IV 40CFR72.2. ...commence commercial operation means to have begun to generate electricity for sale, including the sale of test generation.)*

(Emission limits)

7. The NO_x, CO and VOC limits defined in the following conditions (Nos. 7 through 15) shall not apply during the first continuous 30 minutes immediately following a cold start-up or during the 30 continuous minutes immediately preceding a shutdown. Startup is defined as the time when fuel flow begins. Shutdown is defined as the moment fuel flow to the Twin Pac ceases. These events shall be recorded by the Data Acquisition System (DAS) required by 40CFR75.
8. Emissions of oxides of nitrogen (NO_x), calculated as nitrogen dioxide, from the Twin Pac exhaust stack shall not exceed 3 parts per million volume on a dry basis (ppmvd) corrected to 15 % oxygen and averaged over each continuous rolling 3-hour period. Compliance with this limit shall be demonstrated at the time of the initial compliance test and continuously thereafter.
9. Emissions of oxides of nitrogen (NO_x), calculated as nitrogen dioxide, from the Twin Pac exhaust stack shall not exceed 2.5 parts per million volume on a dry basis (ppmvd) corrected to 15 % oxygen and averaged over a continuous rolling 24-hours. NO_x emissions shall also not exceed 2 ppmvd corrected to 15 % oxygen and averaged over all operational hours in the calendar year.
10. Emissions shall not exceed 6.18 pounds per hour of nitrogen oxides (NO_x) averaged over any 3-hour period. Compliance with this limit shall be demonstrated at the time of the initial compliance test and continuously thereafter.
11. Emissions of carbon monoxide (CO) from the Twin Pac exhaust stack shall not exceed 6 parts per million volume on a dry basis (ppmvd) corrected to 15 % oxygen and averaged over each continuous rolling 3-hour period. Compliance with this limit shall be demonstrated at the time of the initial compliance test and continuously thereafter.
12. Emissions shall not exceed 7.54 pounds per hour of carbon monoxide (CO) averaged over any 3-hour period. Compliance with this limit shall be demonstrated at the time of the initial compliance test and continuously thereafter.
13. Mass Emission limits: NO_x emissions from the Twin Pac shall not exceed 6.18 pounds per hour (3 hour average); 123.60 pounds in any calendar day; 18.05 tons in any calendar year. CO emissions from the Twin Pac shall not exceed 7.54 pounds per hour (3 hour average); 180.96 pounds in any calendar day; 33.03 tons in any calendar year.
14. Emissions of volatile organic compounds (VOCs), calculated as methane, shall not exceed 2 parts per million volume on a dry basis (ppmvd) corrected to 15 %

oxygen (3 hour rolling average). Compliance with this limit shall be demonstrated at the time of the initial compliance test and annually thereafter.

15. Ammonia emissions from the gas turbine shall not exceed 10 ppmvd @ 15 % oxygen. Compliance with this limit shall be demonstrated at the initial compliance test and annually thereafter.

(Monitoring and recordkeeping)

16. An operating log *or Data Acquisition System (DAS) records* shall be maintained on site to record actual times and durations of all startups, shutdowns, quantity of fuel used, hours of daily operation, and total cumulative hours of operation during each calendar year.

17. A Continuous Emission Monitoring System (CEMS) shall be installed and calibrated to measure and record the concentrations of oxides of nitrogen (NO_x) and carbon monoxide (CO) in the exhaust gas on a dry basis (ppmvd) corrected to 15% oxygen, and oxygen (O₂) in the exhaust gas. Upon initial firing and prior to final approval of the permanent CEMS system, a portable CEMS, which has been properly calibrated, shall be used to continuously measure and record these conditions. The portable CEMS shall remain in full operation at all times when the turbine is in operation until the permanent CEMS has been properly installed and certified. The permanent CEMS shall thereafter be in full operation at all times when the Twin Pac is in operation.

18. All CEMs shall be installed, certified, and maintained pursuant to applicable federal regulations including the requirements of Sections 75.10 and 75.12 of Title 40, Code of Federal Regulations Part 75 (40 CFR 75), the performance specifications of Appendix A of 40 CFR 75, the quality assurance procedures of Appendix B of 40 CFR 75, and a CEMS protocol approved by the District. At least 60 days prior to the operation of both the portable and permanent CEMS, the applicant shall submit a CEMs operating protocol to the District for written approval.

19. The District shall be notified in writing at least two (2) weeks prior to any changes made in the CEMs software which affects the measurement, calculation or correction of data displayed and/or recorded by the CEMs.

20. On and after initial startup, the Twin Pac shall be equipped with continuous parametric monitors to measure (or calculate) and to record the following operational characteristics:
 - hours of operation (hours),
 - natural gas flow rate (scfh),
 - exhaust gas temperature (°F),
 - ammonia injection rate (lbs/hr),
 - molar ratio of ammonia injection rate to turbine NO_x emission rate at SCR inlet (instantaneous),
 - inlet temperature of the SCR and oxidation catalyst beds, and
 - power output (MW).

These monitors shall be installed, calibrated, and maintained in accordance with the manufacturer's recommended procedures and a protocol approved by the District. Such protocol shall be submitted to the District for written approval at least 60 days prior to initial startup. This protocol shall include, at a minimum, a

description of the equipment used for direct measurement of operating characteristics and the methodology used to calculate the remaining operating characteristics. All monitors shall be in full operation at all times when the Twin Pac is in operation.

21. The natural gas fuel input rate shall be continuously measured and recorded using District-approved calibrated fuel flow meters. Monthly and annual fuel use records, shall be made available to the District upon request.
22. A monitoring plan in conformance with 40 CFR 75.53 shall be submitted to EPA Region 9 and the District at least 45 days prior to the initial source test, as required in 40 CFR 75.62.

(Source Test Requirements)

23. The Twin Pac exhaust stack shall be equipped with source test ports and platforms to allow for the measurement and collection of stack gas samples consistent with all approved test protocols. The ports and platforms shall be constructed in accordance with San Diego Air Pollution Control District Method 3A, Appendix Figure 2, and approved by the District.
24. No later than 90 days after the Twin Pac commences commercial operation (40CFR70.4(b)(2)), a Relative Accuracy Test Audit (RATA) and all other required certification tests shall be performed and completed on the permanent CEMs in accordance with 40 CFR Part 75 Appendix A performance specifications. At least 45 days prior to the test date, the applicant shall submit a test protocol to the District for approval. Additionally, the District shall be notified a minimum of 45 days prior to the test so that observers may be present. Within 30 days of completion of this test, a written test report shall be submitted to the District for approval.
25. Within 60 days after the initial startup of this equipment, an initial source test shall be conducted by an independent, ARB approved tester or the District, at the applicant's expense, to determine initial compliance with the emission standards of this Authority to Construct. A source test protocol shall be submitted to the District for approval prior to the issuance of a Shakedown Authorization. The source test protocol shall comply with the following requirements:
 - a. Measurements of outlet oxides of nitrogen (NO_x), carbon monoxide (CO), and stack gas oxygen content (O₂%) shall be conducted in accordance with the San Diego County Air Pollution Control District Method 100, as approved by the U.S. Environmental Protection Agency (EPA).
 - b. Measurements of outlet volatile organic compounds (VOCs) shall be conducted in accordance with the San Diego Air Pollution Control District Methods 18 and 25A.
 - c. Measurements of outlet ammonia shall be conducted in accordance with Bay Area Air Quality Management District (BAAQMD) test method ST-1B.

- d. Source testing shall be performed at no less than 80% of the turbine rated load.
26. Within 30 days after completion of the initial source test, a final test report shall be submitted to the District for review and approval.
27. In the event the initial source test results do not demonstrate compliance with District emissions standards to the satisfaction of the District, the applicant shall take corrective action to meet these standards. Any proposed corrective action that would result in a modification to the equipment shall require an application for modification and a District Authority to Construct for such modification.
28. This equipment shall be source tested on an annual basis to demonstrate compliance with the outlet NOx, outlet CO, outlet VOC, and outlet ammonia emission standards of this Authority to Construct, using District approved methods, unless otherwise directed in writing by the District.
29. Based on source testing additional monitoring parameters may be established to ensure compliance.

(Construction Completion Notice)

30. This Authority to Construct authorizes temporary operation of the above specified equipment. This temporary permit to operate shall take effect upon written notification to the District that construction has been completed in accordance with this Authority to Construct. This temporary permit to operate will remain in effect, unless withdrawn or modified by the District, until the equipment is inspected by the District and a revised temporary permit (Startup Authorization) is issued or a Permit to Operate is granted or denied.
31. Upon completion of construction in accordance with this Authority to Construct and prior to commencing operation, the applicant must complete and mail, deliver, or fax the enclosed Construction Completion Notice to the District. After mailing, delivering, or faxing the Notice, the applicant may commence operation of the equipment. Operation must be in compliance with all of the conditions of this Authority to Construct and applicable District rules.

This Authority to Construct shall be posted on or within 25 feet of the above described equipment, or maintained readily available at all times on the operating premises.

This Air Pollution Control District Authority to Construct does not relieve the holder from obtaining permits or authorizations which may be required by other governmental agencies.

Within thirty (30) days after receipt of this Authority to Construct, the applicant may petition the Hearing Board for a hearing on any conditions imposed herein in accordance with Rule 25.

This Authority to Construct is not transferable and will expire on Month Day, 2002 (*year from the date issued*).

If you have any questions regarding this action, please contact the undersigned at (858) 650-4611.

CalPeak Power No. 4, Border Facility
Application No. 976402
Date Issued

ALTA STENGEL
Associate Air Pollution Control Engineer

AFS:

Enclosure

cc: Compliance Division

I.D.# 07594A

APPENDIX I
ACOUSTICAL REPORT

ACOUSTICAL ASSESSMENT
REPORT
for
CALPEAK BORDER

Prepared for:

HELIX Environmental Planning, Inc.
8100 La Mesa Boulevard, Suite 150
La Mesa, California 91941

Prepared by:

Pacific Noise Control
219 Woodland Drive
Vista, California 92083
Tel. (760) 758-1198

June 2001

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Calpeak Border ♦ Acoustical Analysis

SUMMARY

The project proposes to develop an electrical generation facility in the Otay Mesa area in the City of San Diego. Several pieces of mechanical equipment would generate noise at the site. The majority of the equipment would be housed in enclosures and would have intake and exhaust silencers. Based on manufacturers supplied noise source sound level data provided to the applicant and the preliminary site layout, the project would generate noise levels that would comply with the City's industrial zone noise ordinance criteria.

1.0 INTRODUCTION AND BACKGROUND

This report evaluates the noise impacts that would be associated with the proposed Calpeak Border project. The project is located in the City of San Diego (*Figure 1*).

The project consists of a 49-megawatt (MW) nominal electrical generation facility (*Figure 2*). The facility would utilize a natural gas-fired combustion turbine generator equipped with noise abatement features. The Trans Pac aeroderivative combustion turbine-generator consists of three primary units. The gas turbine unit, the generator unit and the electrical/control unit. The TransPac turbine and generator units consist of two opposed gas turbines directly connected through a diaphragm coupling to a single double-ended electric generator. The electrical/control unit includes the 15 kV switchgear and all of the controls and instruments necessary for operation. The 15 kV switchgear is connected to the generator by a prefabricated, totally enclosed, weatherproof, 15 kV class bus duct. The turbine/generator and electrical control units are housed in all weather, prime-painted steel enclosures, including lighting and electrical services. Fire protection equipment is provided in the gas turbine enclosure. Combustion turbine inlet air is filtered and cooled via an inlet fogging system. The electric generator is an open ventilated, two-pole, air-cooled unit. It includes a shaft mounted overhung main and pilot brushless exciters.

The facility would operate a maximum of 24 hours per day and operate most summer days and less frequently in the winter. The facility would be dispatched by the Independent System Operator (ISO) for generation.

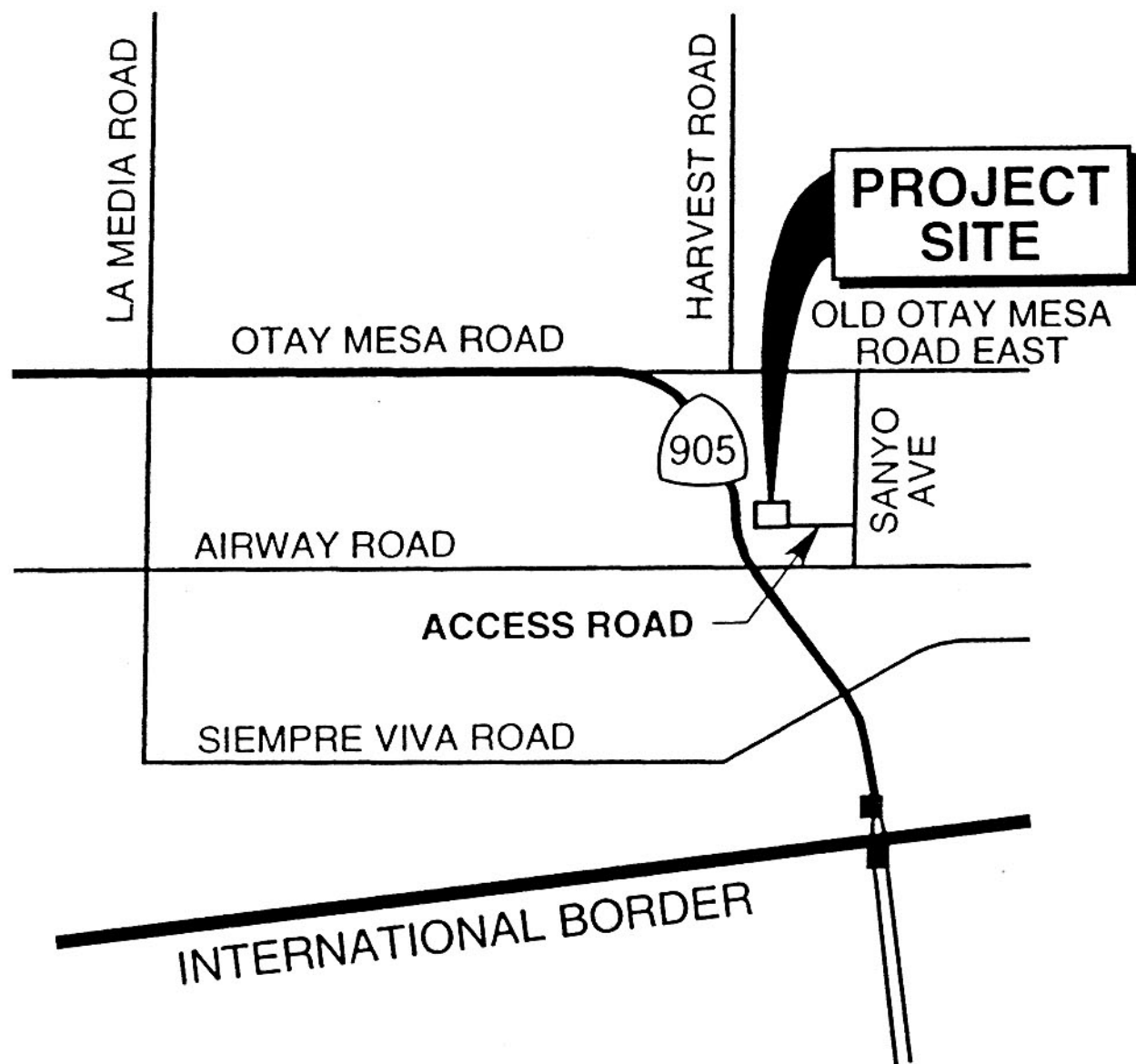
Noise Concepts

Noise is defined as unwanted or undesired sound. Sound levels can be measured easily, but, the variability in subjective and physical response to sound complicates the identification of noise impacts. The basic terminology and concepts of noise are described below. Technical terms are defined in *Attachment 1* to this report.

Sound (noise) levels are measured in decibels (dB). Common sound levels for various noise sources are depicted in *Table 1*. Community sound levels are typically measured in terms of the A-weighted sound level. The A-weighted scale adjusts the measured sound levels to generally correspond with the way the human ear responds to sound. All sound levels discussed in this report are A-weighted.

Additional units of measure have also been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}), also referred to as the time-average sound level, is a single-number representing the fluctuating sound level in dB over a specified period of time. It is a sound energy average of the fluctuating level and is equal to a constant unchanging sound level of that dB level.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime. Thus, another noise descriptor used in community noise assessments (termed the Community Noise Equivalent Level [CNEL]) was introduced. The CNEL scale represents a time-weighted 24-hour average noise level based on the A-weighted sound level. CNEL accounts for the increased noise sensitivity during the evening



No Scale

Base Map Source: Patch Engineering, February 2001

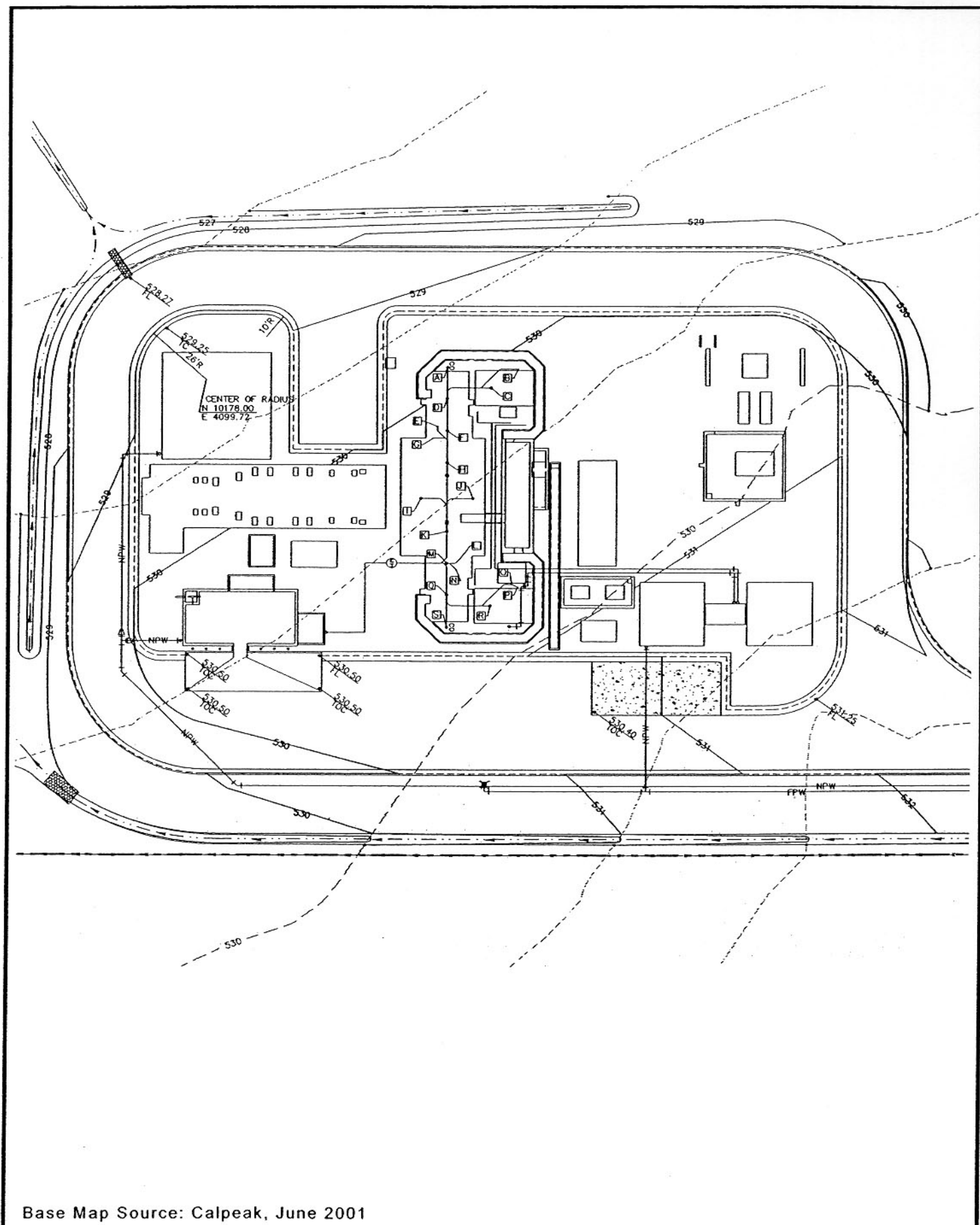


TABLE 1
TYPICAL SOUND LEVELS MEASURED
IN THE ENVIRONMENT AND INDUSTRY

Noise Source	A-Weighted Sound Level in Decibels	Noise Environment	Subjective Impression
Civil Defense Siren (100 ft.)	130		
	120		Threshold of pain
	110	Rock Music Concert	
Pile Driver (50 ft.)	100		Very loud
Power Lawn Mower (3 ft.)			
Motorcycle (25 ft.)	90	Boiler Room	
Diesel Truck (50 ft.)		Printing Press Plant	
Garbage Disposal (3 ft.)	80		
Vacuum Cleaner (3 ft.)	70		Moderately loud
Normal Conversation (3 ft.)			
	60		
		Department Store	
Light Traffic (100 ft.)	50	Private Business Office	
Bird Calls (distant)	40		Quiet
Soft Whisper	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of hearing
	0		

(7:00 to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.) by adding five and ten decibels, respectively, to the average sound levels occurring during these hours. Another noise descriptor, Day-Night Average Sound Level (DNL), is also used and is similar to CNEL except that no adjustment is made to the noise level occurring during the evening hours.

2.0 METHODOLOGY

An ambient noise measurement was conducted at the site and the closest noise sensitive receiver to quantify the existing daytime noise environment. The noise measurements were conducted using a Larson-Davis Laboratories Model 700 (S.N. 2132) integrating sound level meter equipped with a Bruel & Kjaer Type 4176

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½-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level meter meets the current American National Standards Institute standard for a Type 1 sound level meter. The sound level meter was positioned at a height of approximately five feet above the ground. The noise measurements were conducted for a period of 20-minutes and because of the consistency of the background noise sources is considered representative of the daytime conditions.

Noise source data was provided by the manufacturers to the applicant (Calpeak, 2001). The sound level data for the turbine and generator equipment is based on manufacture's design requirement for the equipment. The noise source noise data are based on a reference distance of three feet from the equipment. At this distance, the sound levels are considered to be in the acoustic near field. Only near field data is available from the manufacturer for this particular facility. The noise measurement data, however, was adjusted in this analysis to account for the physical size of the equipment and preliminary site layout. The noise source sound level and design specification data provided by the manufacturers to the applicant and used in this report is included in *Attachment 2*.

The noise impact assessment utilized the applicable noise level criteria established in the local jurisdiction's noise ordinance or noise element. For this site, the appropriate noise criteria are contained within the City's noise ordinance and are in terms of a one-hour average sound level.

3.0 EXISTING CONDITIONS

Land uses immediately adjacent to the project site consist of undeveloped land. A San Diego Gas & Electric (SDG&E) substation facility is located approximately 1,000 feet north of the site. An industrial park is located approximately 700 feet east of the site. Three existing residences are located approximately 3,000 feet northeast of the site. West of the site is State Route 905 (SR 905) and industrial development is located west of the road. A power generating facility is currently being constructed approximately 1,500 feet north of the site. Industrial uses are also located south of Airway Road approximately 600 feet from the site.

Regulatory Setting

The City of San Diego's noise ordinance establishes sound levels at or beyond the boundaries of the property on which the sound is generated (City of San Diego 2000). The allowable noise level limits depend upon the City's land use zone, time of day and duration of the noise. The facility project site and adjacent property to the north, south, east and west are located within industrial zones (I). The applicable one-hour average noise level limit is 75 dB at the adjacent boundaries.

Single family homes are located along Otay Mesa Road northeast of the site beyond the industrial zoned property. The City's noise level limit at the boundary of between two land use classifications is the arithmetic average of the two land uses (i.e., industrial and residential). Thus, the noise level limit would be 62.5 dB between the hours of 7:00 a.m. and 7:00 p.m.; 60 dB between the hours of 7:00 p.m. and 10:00 p.m.; and 57.5 dB between the hours of 10:00 p.m. and 7:00 a.m. at the residential properties. The existing residences located along Otay Mesa Road are located within the County. Therefore, the County's noise ordinance limits are also

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utilized in this study. The residential properties are located within Specific Plan Zone (S-88). The specific plan for the area designates that the properties are to be developed with mixed-industrial uses. The County's noise ordinance states that the sound level limit on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. The County's noise ordinance limits for the existing residences along Otay Mesa Road are that the one-hour average sound level shall not exceed 62.5 dB between the hours of 7:00 a.m. and 10:00 p.m.; 60 dB between the hours of 7:00 p.m. and 10:00 (i.e., arithmetic average of industrial and residential zones).

Ambient Noise Level

Noise at the site primarily results from traffic noise along SR 905. Other noise sources in the area include traffic along Airway Road, Otay Mesa Road and Sanyo Avenue, aircraft from Brown Field located approximately 1.5 miles northwest of the site and Aeropuerto de Tijuana located approximately 1.7 miles southwest of the site, as well as noise from the nearby industrial facilities.

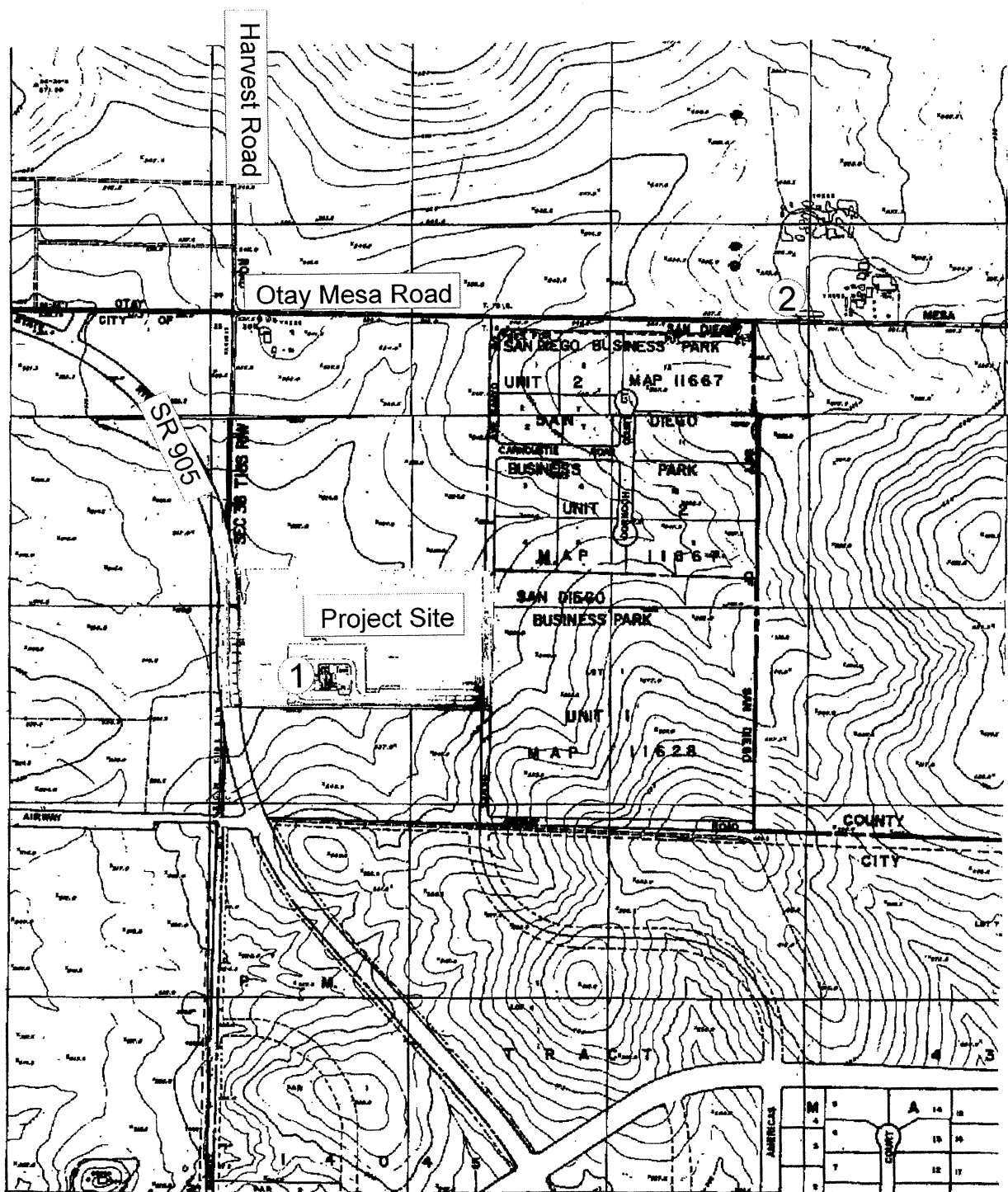
Noise measurements were conducted at the site and the closest noise sensitive receiver to determine the existing noise level. The noise measurements were conducted using a calibrated Larson-Davis Laboratories Model 700 (S.N. 2132) integrating sound level meter equipped with a Bruel & Kjaer Type 4176 ½-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 1 precision sound level meter. The noise measurement at the project site was located along the proposed western facility boundary. The noise measurement site (Site 1) is depicted in *Figure 3*. The measured average sound level at the site was 63 dB and was primarily the result of traffic along SR 905. The results of the noise measurement are depicted in *Table 2*.

The closest residence would be located approximately 3,000 feet northeast of the facility site. A noise measurement was conducted along the western property boundary of the closest residence to the proposed facility site (Site 2). The noise measurement was conducted at a distance of approximately 80 feet from the center line of Otay Mesa Road. This is approximately the same setback distance from the home to Otay Mesa Road. The noise measurement was made on May 22, 2001 between approximately 3:30 and 3:50 p.m. The measured average sound level was 61 dB. The noise primarily resulted from traffic along Otay Mesa Road.

TABLE 2
MEASURED NOISE LEVELS

Site	Date/Time	Average Sound Level (dB)	Maximum Sound Level (dB)	Minimum Sound Level (dB)	L ₉₀ (dB)
1	5/22/01 3:00-3:20 pm	63	73	51	58
2	5/22/01 3:30-3:50 pm	61	72	48	50

Notes: Clear sky, 77 degrees, 8 mph westerly wind, 60 percent relative humidity.



4.0 IMPACT ANALYSIS

Future noise levels have been calculated for the proposed facility using the noise source data provided by the manufacturers to the applicant. The primary noise generating equipment would include two turbines, a generator, two gas compressors, fans, air compressor, main transformer, SCR catalyst and exhaust stack, and a hydraulic start unit. Most of the equipment would be located within enclosures with exhaust and intake silencers.

The proposed facility site would be located within a parcel of land designated for industrial use. The property adjacent to the site is also designated for industrial uses. The facility equipment pad would be located near the southwest corner of the parcel.

The proposed project would generate a one-hour average sound level of approximately 60 dB at the northern parcel property boundary, 62 dB at the western property boundary, 57 dB at the eastern property boundary and 73 dB at the southern property boundary. These noise levels would comply with the City's industrial zone noise ordinance criteria.

The closest residence would be located approximately 3,000 feet northeast of the facility site. Without intervening shielding, the facility would generate a one-hour average noise level of approximately 43 dB at the closest residential property boundary. However, there are several rows of industrial buildings located on the east side of Sanyo Avenue that would shield the homes from the site. The intervening buildings would provide a minimum of five dB of noise attenuation. Thus, the one-hour average noise level would be less than 40 dB at the closest home. This noise level would comply with both the City and County's noise ordinance criteria.

The Larkspur Energy Facility is currently being constructed at the southeast corner of Harvest Road and Otay Mesa Road. A noise analysis has been completed for the Larkspur Energy Facility (2001). The noise assessment indicates that the facility would generate a noise level of approximately 39 dB at the closest residences. These are the same residences discussed in the preceding paragraph. The report also indicates that the residences are located approximately one-mile east of the facility, however, the residences appear to be located approximately 2,600 feet from the facility. Thus, adjusting the noise level based on a 2,600 foot distance would result in a noise level of approximately 45 dB at the closest residences. Adding the noise associated with the proposed Calpeak project would result in a cumulative one-hour average noise level of approximately 46 dB at the residences associated with the two facilities. This is within both the City's and County's noise ordinance standards.

5.0 MITIGATION

Based on calculations using the provided noise source data and preliminary site layout, the proposed project is anticipated to comply with the City's noise ordinance criteria. Therefore, mitigation measures would not be required.

6.0 REFERENCES

Aeroacoustic Corporation. February 7, 2001. *Sound Level Data for Exhaust Dilution Air Fan and AFCU Fan.*

-----, March 7, 2001. *Application for Certification Larkspur Energy Facility.*

Calpeak. June 4, 2001. *Telephone Conversation with Mr. Glenn Sampson.*

City of San Diego. June 2000. *San Diego Municipal Code, Article 9.5 Noise Abatement and Control.*

San Diego, County of. *Chapter 4, Division 6 of Title 3 Noise Abatement and Control.*

ATTACHMENT 1

DEFINITIONS

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Community Noise Equivalent Level, CNEL	CNEL is the average equivalent A-weighted sound level during a 24-hour day. CNEL accounts for the increased noise sensitivity during the nighttime hours (10 PM to 7 AM) and evening hours (7 PM to 10 PM) by adding ten dB to the sound levels at night and five dB to the sound levels during the evening.
Day-Night Average Sound Level, DNL	DNL is the average equivalent A-weighted sound level during a 24-hour day. DNL accounts for the increased noise sensitivity during the nighttime hours by adding ten dB to the sound levels at night.
Decibel, dB	A unit for measuring sound pressure level and is equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.
Maximum A-weighted Sound Level, L_{\max}	The greatest sound level measured on a sound level meter during a designated time interval or event.
Time-Average Sound Level, TAV	The sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period. TAV is designed to average all of the loud and quiet sound levels occurring over a time period.

ATTACHMENT 2

SOUND LEVEL DATA

<u>Equipment</u>	<u>Sound Level (at 3 feet)</u>
Turbine/Generator/Lube Oil	85 (with enclosure)
Hydraulic Start Pac	85 (with enclosure)
Electric Generator Silencer	94
Transformer	75
Fuel Gas Compressor	75 (with enclosure)
SCR Catalyst	75 (with enclosure)
Stack and Silencer	75 (stack and casing)
AFCU Fan	69 (with silencer)
Dilution Fan	84 (with silencer)
Air Compressor	75 (with enclosure)

Sources: Calpeak 2001, Aeroacoustic Corporation 2001.

APPENDIX J
BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT

June 13, 2001

Prepared for:

CITY OF ESCONDIDO
201 N. Broadway
Escondido, California 92025

Prepared by:

HELIX ENVIRONMENTAL PLANNING, INC.
8100 La Mesa Boulevard, Suite 150
La Mesa, California 91941-6476

CalPeak Border #4 Parcel
Biological Technical Report

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1.0 INTRODUCTION

This report presents the results of surveys by HELIX Environmental Planning, Inc. (HELIX) for the CalPeak #4 Border generating station, located within a 20.7-acre study area in the Otay Mesa area of the City of San Diego (Figures 1 and 2). HELIX conducted a survey of biological resources in order to evaluate the feasibility of using a portion of the study area for a 49.5-megawatt natural gas electrical generating station. Sensitive communities and species, as well as the potential for sensitive resources to occur within the study area, are reviewed below.

PROJECT DESCRIPTION

The 20.7-acre survey area is located south and east of the existing SDG&E Harvest Substation, between Otay Mesa Road to the north and Airway Road to the south (Figure 2). State Route 905 is adjacent to the study area to the west, and Sanyo Avenue lies east of the study area. Surrounding land use in the immediate vicinity of the proposed project is primarily light industrial and includes the Casio and Sanyo buildings to the east, and the existing substation and Wildflower electrical generating facility to the north. (Construction is underway for the Wildflower power plant, north of the existing substation.) Vacant land borders the study area to the south and north and also is present west of State Route 905 (inactive agriculture).

The study area and vicinity are relatively flat (Figure 2); elevations within the study area range from approximately 520 to 550 feet above mean sea level. The study area has historically been used for agricultural tomato production (Sampson 2001). Vegetation (Figure 3) is typically dominated by non-native species, primarily mustard (*Brassica* sp.); however, the majority of the study area has been recently plowed. Soil types are composed primarily of Diablo clay, with a small amount of Salinas clay, to the north (Bowman 1973).

As proposed, facility structures would be sited along the southern boundary of the study area, just west of center (Figure 4). An access road would extend eastward from this facility to Sanyo Avenue, paralleling the southern property boundary. An approximately 1.75-acre laydown area, which would be used as a staging area during construction, would be located west of the permanent facility structures.

The permanent structures, laydown area and access road (Figure 4) would be enclosed by a six-foot high chain link fence, with the entryway at Sanyo Avenue blocked by a gate. Gas and water lines are anticipated to be located within Sanyo Avenue. Connections to these utilities, between the facility and Sanyo Avenue, would be located along the access road. The facility would connect to existing electrical lines at the SDG&E facilities to the north of the proposed site.

2.0 METHODS

Site visits are summarized in Table 1, below. On May 18, 2001, HELIX biologist Sally Trnka visited the study area to map vegetation communities and inventory plant and animal species. Vegetation was mapped on a 1" = 300' scale aerial photograph of the study area and environs. Portions of all habitat types within the study area were walked, and the plant and wildlife species observed were recorded. Sensitive plant species were searched for opportunistically during the general survey. The potential for sensitive species to occur within the study area was determined by conducting a habitat-based analysis of the known distribution of sensitive species in the vicinity, using in-house database and references. Both protocol quino checkerspot butterfly (QCB) surveys (Appendix A) and a negative habitat assessment (Appendix A) were conducted for the 2001 season. Surveys, conducted between February 28 and April 13, are listed in Table 1. A jurisdictional delineation was conducted by HELIX biologists Larry Sward, Sally Trnka, and Amy Bridgeman on May 10 and 11, 2001.

Table 1 SITE VISITS		
BIOLOGIST(S)	DATE	PURPOSE OF VISIT
Amy Bridgeman and Deborah Pudoff	2/28/01	QCB Habitat Assessment
Amy Bridgeman	3/1/01	Non-protocol QCB Survey and Habitat Assessment
Amy Bridgeman	3/8/01	Protocol QCB Survey
Amy Bridgeman	3/15/01	Non-protocol QCB Survey
Amy Bridgeman	3/20/01	Protocol QCB Survey
Amy Bridgeman	3/22/01	Protocol QCB Survey
Amy Bridgeman	3/31/01	Protocol QCB Survey
Amy Bridgeman	4/8/01	Non-protocol QCB Survey
Amy Bridgeman	4/13/01	Protocol QCB Survey
Larry Sward, Sally Trnka, and Amy Bridgeman	5/10/01	Jurisdictional Delineation
Sally Trnka and Amy Bridgeman	5/11/01	Jurisdictional Delineation
Sally Trnka	5/18/01	Vegetation Mapping and General Survey

Nomenclature for this report is from Hickman ed. (1993) and Beauchamp (1986) for plants and Holland (1986) for vegetation communities; Collins (1997) for reptiles and amphibians; the American Ornithologists' Union (1998) for birds; and Jones et al. (1997) for mammals. Sensitive plant and animal status is taken from the California Department of Fish and Game (CDFG; 2000a) and CDFG (2000b), respectively. Sensitive plant species habitats and blooming periods were determined from Skinner and Pavlik (1994), as updated.

3.0 SURVEY RESULTS

3.1 VEGETATION COMMUNITIES

One native vegetation community, wetland, occurs within the study area boundary (Figure 3). This area was mapped previously for Pacific Views in June 2000. The remainder of the study area is comprised of disturbed wetland, non-native grassland, and disturbed areas mapped by HELIX in May 2001. A description of each of the habitats mapped by HELIX is provided below.

3.1.1 Wetland (Including Disturbed)

Two wetland areas occur within the study area. A disturbed wetland, totaling approximately 0.21 acre, occurs along State Route 905, on the western boundary of the study area. Vegetation within this wetland area is dominated by two non-native species: curly dock (*Rumex crispus*) and grass poly (*Lythrum hyssopifolium*). A previously mapped wetland (Faught 2000), approximately 0.01 acre in size, encroaches into the eastern extension of the study area. Vegetation within the previously mapped wetland in the study area includes willow species (*Salix* sp.). Wetland habitat is sensitive, according to the City, ACOE and CDFG. Mitigation and additional permitting would be required for any impacts to wetland habitats.

3.1.3 Non-native Grassland (Tier IIIB)

The non-native grassland occurs primarily along the northwestern and south-central survey area boundaries. This community is dominated by non-native grasses, including Italian ryegrass (*Lolium multiflorum*), two species of canary grass (*Phalaris minor* and *P. paradoxa*), bromes (*Bromus* sp.), wild oats (*Avena* sp.) and a small component

of mustard (*Brassica* sp.). The total acreage of non-native grassland within the study area is 2.8 acres. The City considers non-native grassland a sensitive habitat, due to its provision of foraging habitat for raptors, and impacts would require mitigation.

3.1.4 Disturbed

Disturbed areas are dominated primarily by non-native species and have little to no biological value. This category includes 17.5 acres of the 20.7- acre study area.

3.1.5 Developed

Disturbed areas within the study area consist of 0.3 acre within and immediately adjacent to the existing SDG&E facilities.

3.2 WETLANDS/JURISDICTIONAL AREAS

A potential ACOE and CDFG jurisdictional wetland was observed on site, along State Route 905. In addition, a previously mapped jurisdictional wetland (Faught 2000) encroaches into the portion of the study area extending north to Otay Mesa Road. The footings for the overhead utility lines would be located outside the disturbed wetland boundaries, as discussed in Section 5.0, below. No development by CalPeak is planned for the portion of the study area subject to the jurisdiction of the ACOE or CDFG, including the previously mapped wetland.

3.3 PLANT SPECIES

Plant species observed within the study area are listed in Appendix B. One sensitive plant species was observed: San Diego County viguiera (*Viguiera laciniata*).

San Diego County viguiera

Listing: CNPS List 4; R-E-D 1-2-1

Distribution: San Diego County and Baja California, Mexico.

Habitat: Diegan coastal sage scrub.

Status: Two individuals were observed within disturbed habitat in the northeastern portion of the study area.

Narrow endemic (City of San Diego 2000c) and other sensitive plant species not observed but with potential to occur in the study area are listed in Appendices C and D, respectively. These plants were chosen for analysis based on their known distributions and habitat. The probability of any of these species occurring within the study area in the future is low because: (1) appropriate soils or habitat are not present; or (2) if soil and habitat are present, associated plants were not observed when the project was surveyed.

3.4 ANIMAL SPECIES

Because the study area is composed almost entirely of disturbed habitat, few animals were observed or detected. Animal species observed within the study area are listed in Appendix E. One sensitive animal species, the northern harrier (*Circus cyaneus*), was observed foraging over the study area.

Northern harrier

Status: Nesting -/CSC

Distribution: Widespread throughout the temperate regions of North America and Eurasia. Winters and migrates throughout California from below sea level in Death Valley to an elevation of 9,800 feet. Known breeding areas in San Diego County include Torrey Pines, the Tijuana River Valley, and Camp Pendleton.

Habitat(s): Coastal, salt, and freshwater marshlands; grasslands; and prairies.

Status: Observed foraging over the study area.

Focused, protocol QCB surveys were conducted for a portion of the study area, with negative results. A negative habitat assessment was conducted for the remainder of the study area.

A total of 34 sensitive animals was analyzed for potential to occur within the study area as listed in Appendix F. These animals were chosen for analysis based on their distribution and habitat preferences.

4.0 REGIONAL AND REGULATORY CONTEXT

The study area consists largely of disturbed habitat, with small amounts of non-native grassland and wetland (including disturbed). Undeveloped, disturbed or inactive agricultural lands border the study area to the north, south, and west. The area to the east has been developed.

Regulatory plans and policies that potentially apply to the proposed project include the federal and state Endangered Species Acts (ESAs), Section 1600 of the CDFG Code, California Environmental Quality Act (CEQA), the City of San Diego's Biology Guidelines (2000b) and Environmentally Sensitive Lands (ESL) Guidelines (2000a), and Land Development Code (2000c). The federal ESA provides the legal framework for protection of species (and their habitats) which are identified as being in danger of extinction or which are threatened at a regional level. Impacts to protected species (those listed as endangered or threatened) are considered a take under the federal ESA.

The following regulatory agencies regulate wetlands: ACOE, CDFG and the City. These agencies require development to be sited to include appropriate buffers to preserve the integrity of wetlands, required by ACOE, CDFG and the City's ESL ordinance. Since, no development by CalPeak is planned for the portion of the study area subject to the jurisdiction of the ACOE or CDFG, wetland resource agency permit requirements would not apply.

In July 1997, the City, USFWS, and CDFG adopted the Implementing Agreement for the Multiple Species Conservation Program (MSCP; City of San Diego 1997; 1996 a, b, c). This program provides the framework for regional planning for the City of San Diego and allows for the incidental take of threatened and endangered species as well as regionally sensitive species that are conserved by it. The program designates regional preserves that are intended to be mostly void of development activities, while allowing development of other areas subject to the requirements of the program. The Multiple Habitat Planning Area (MHPA) preserves, designated by the MSCP, are intended to link all core biological areas into a regional wildlife preserve. The project is neither within nor adjacent to MHPA under the City's MSCP.

The mitigation requirements for sensitive resources discussed in this document follow the requirements of the City of San Diego Land Development Code, Biology Guidelines (2000c). The City's ESL code regulates the encroachment of a project onto land within the MSCP Subarea.

5.0 IMPACTS AND MITIGATION

The project site contains two sensitive habitats: disturbed wetland and non-native grassland. Wetlands are considered to be sensitive by the ACOE, CDFG and City. Non-native grassland habitat, as noted above, is considered sensitive by the City. If impacts occur to either wetland or non-native grassland habitat, mitigation would be required.

The proposed facility, access route, and laydown area would not directly impact the existing wetland resources in the study area. Although overhead lines would span approximately 0.01 acre of disturbed wetland, the tower footings would be located north and south of the disturbed wetland as part of project design. Utilities should also be sited to include appropriate buffers to preserve the integrity of wetlands, required by ACOE, CDFG and the City's ESL ordinance.

With regard to non-native grassland, a worst-case assumption of two pole footings is assumed. Assuming a disturbance footprint of approximately 10 feet by 10 feet for each pole, approximately 0.01 acre would be impacted for transmission line placement. Approximately 0.4 acre within the proposed generating station also would be

HELIX

impacted (Table 2). The mitigation ratio for these impacts to non-native grassland, assuming mitigation would occur inside the MHPA, is 0.5:1. Thus, the mitigation requirements for direct impacts to Tier IIIB non-native grassland is 0.2 acre, which would likely be satisfied via a contribution to the City's habitat acquisition fund. Should mitigation for non-native grassland occur outside the MHPA, mitigation would be required at a 1:1 ratio.

Table 2 PROJECT IMPACTS AND MITIGATION					
VEGETATION COMMUNITY	TIER	STUDY AREA (acres)	PROJECT IMPACT (acres)	MITIGATION RATIO ¹	REQUIRED MITIGATION (acres)
Wetland	-	0.01	-	2:1 – 3:1	-
Disturbed Wetland ²	-	0.21	-	2:1 – 3:1	-
Non-native Grassland	IIIB	2.8	0.4	0.5 : 1	0.2
Disturbed Habitat	IV	17.5	5.5	-	-
Developed Area ³	IV	0.3	TBD	-	-
TOTAL		20.7	5.9	-	0.2

¹ Assuming mitigation within the MHPA.

² Impacts to disturbed wetland would be avoided.

³ Impacts to developed area to be determined upon final project design. No mitigation will be required.

Impacts to northern harrier, a California Species of Concern that has been observed to forage over non-native grassland on site, would not be significant due to the relatively low sensitivity of the species. No sensitive plant species were observed within the project footprint. Any impacts to San Diego County viguiera, which has been observed in the study area but not on site, would not be significant due to the disturbed nature of the site and the low sensitivity of the species. Impacts to other sensitive animals and plants are not expected due to their low potential to occur and to low habitat quality on site.

From a regional planning standpoint, the project site is not located within a key area such as a planned preserve or wildlife corridor. The project therefore would have no regional or cumulative effects under the draft MHCP. Because the proposed project is not within or adjacent to the MHPA, no indirect impacts (i.e., habitat insularization, erosion, edge effect, exotic species invasion, increased lighting, vehicular noise, and increased human or pet intrusion) would occur to the MHPA as a result of the proposed project. No specific management directives, provided in the City of San Diego MSCP Subarea Plan, are listed for the project site.

6.0 CONCLUSION

The majority of the project facility site, laydown area, access route, and utility easement lacks sensitive biological resources. The non-native grassland areas would represent significant impacts requiring mitigation. The project would be designed to avoid impacts to disturbed wetland within the electrical easement. No additional surveys are considered necessary because of the lack of potential for sensitive plant or animal species on site.

6.0 LITERATURE CITED


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LEGEND

Vegetation

- DW Disturbed wetland
- NNG Non-native grassland
- DH Disturbed habitat
-  Wetlands delineated by Bob Faught for Pacific Views June 8th, 2000.

Sensitive Resources

- VI San Diego County viguiera (*Viguiera laciniata*)
- Note: A northern harrier (*Circus cyaneus*) was observed foraging over the site.

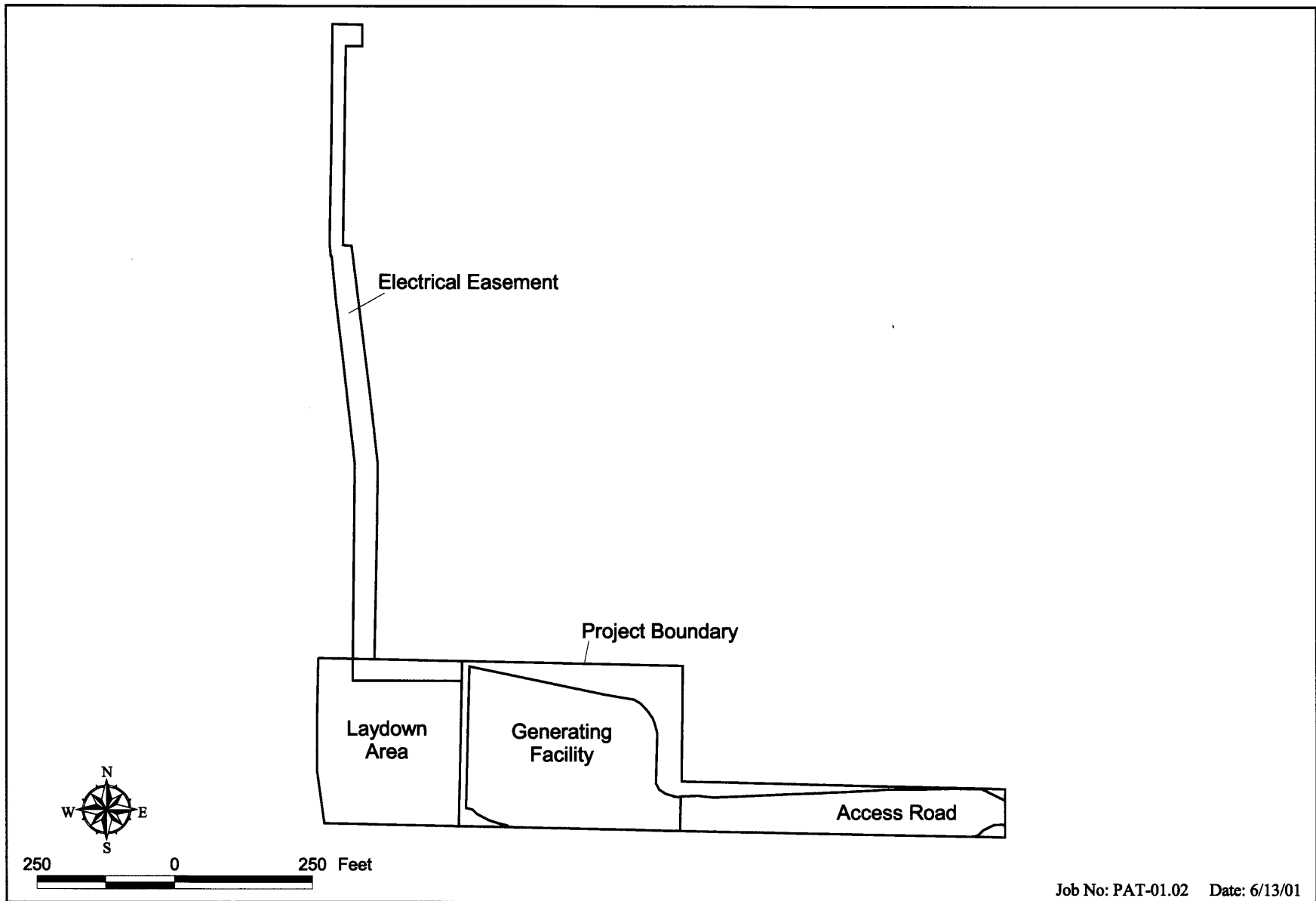


Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

Job No: PAT-01.02 Date: 6/13/01

Vegetation and Sensitive Resources

CALPEAK #4 BORDER GENERATING STATION



Site Plan

CALPEAK #4 BORDER GENERATING STATION

Figure 4

LEGEND

Vegetation

- DW Disturbed wetland
- NNG Non-native grassland
- DH Disturbed habitat
- DEV Developed
- Wetlands delineated by Bob Faught for Pacific Views June 8th, 2000.

Sensitive Resources

VI San Diego County viguiera (*Viguiera laciniata*)

Note: A northern harrier (*Circus cyaneus*) was observed foraging over the site.

Project impacts



Appendix A

QUINO CHECKERSPOT BUTTERFLY REPORTS

May 30, 2001

PAT-01.02

Field Supervisor
Attn: Ms. Nancy Gilbert
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, California 92008

Subject: Quino checkerspot butterfly survey report for the proposed CalPeak #4 Border Generating Station Site.

Dear Ms. Gilbert:

This report presents the findings of protocol surveys for the federally listed endangered quino checkerspot butterfly (QCB; *Euphydryas editha quino*). The surveys were conducted on the CalPeak #4 Border parcel, located within the City of San Diego, San Diego County, California (Figure 1). The proposed project is a 49.5-megawatt electrical generation station in response to the California Independent System Operator's immediate need for additional electricity generation over the next three years. The project is currently undergoing environmental review per the governor's 21-day emergency permitting process for electrical generating stations.

Site Description

The 6.22-acre site is located approximately 700 feet south of the existing SDG&E Harvest Substation, between Otay Mesa Road to the north and Airway Road to the south. State Route (SR) 905, to the west, is adjacent to the site, and Sanyo Avenue lies east of the site. Surrounding land use in the immediate vicinity of the proposed project is primarily light industrial and includes the Casio and Sanyo buildings to the east, and the existing substation and Wildflower facility to the north. (Construction is underway for the Wildflower power plant facility, north of the existing substation.) Vacant land borders the project site to the south and also is present west of SR-905.

The site and vicinity are relatively flat (Figure 1); on-site elevations range from 525 to 537 feet above mean sea level. The site historically has been used for agricultural tomato production¹. Current vegetation is dominated by non-native species, primarily mustard (*Brassica* sp.). The soil type on site is composed primarily of Diablo clay, with a small amount of Salinas clay, to the north (Bowman 1973).²

Methods

The methods employed during the presence/absence surveys (and site assessment) followed the USFWS Year 2000 Survey Protocol for the QCB. The site assessment was performed by Amy Bridgeman and Deborah Pudoff on February 28, 2001 prior to the official start of the flight season on March 8, 2001. Presence/absence surveys were conducted by Amy

¹ Sampson, Glen. 2001. Personal Communication. May 11.

² Bowman, R.H. 1973. Soil Survey of the San Diego Area, California, Part I. United States Department of Agriculture.

Bridgeman between March 1 and April 13, 2001 (Table 1). Approximately one acre of potential habitat (bare, muddy ground) was surveyed out of a total of approximately 6.22-acres (Figure 1). Areas that were excluded from the survey (5.22 acres) included a dense cover of non-native species such as mustard (*Brassica* sp.) and Russian thistle (*Salsola* sp.). The surveys were conducted under HELIX's USFWS permit TE778195-5. A list of the butterfly species observed during each survey week was made and is provided in Appendix A. Copies of field notes from each survey are provided in Appendix B.

Table 1 QUINO CHECKERSPOT BUTTERFLY SURVEY DATA						
Biologist Name	Date/ Protocol Survey #	Conditions at:	Time	Temperature on Ground in Shade (°F)	Weather	Wind (mph)
Amy Bridgeman	3/1/01**	Beginning	1300	63	Clear/Patchy	0-3
		Ending	1400	62	Clear/Patchy	0-3
	3/8/01 one	Beginning	1350	68	Clear/Slight Haze	1-7
		Ending	1445	70	Clear/Slight Haze	1-7
	3/15/01 **	Beginning	1435	59	Hazy	4-12
		Ending	1505	58	Hazy	4-12
	3/20/01 two	Beginning	1355	71	Clear/Some Haze	1-7
		Ending	1435	76	Clear/Some Haze	1-7
	3/22/01 three	Beginning	1330	71	Partly Cloudy	1-12
		Ending	1400	70	Partly Cloudy	4-7
	3/31/01 four	Beginning	0930	74	Slight Haze	1-3
		Ending	1000	74	Slight Haze	1-3
	4/8/01**	Beginning	1320	61	Partly Cloudy	0-3
		Ending	1350	61	Partly Cloudy	1-3
	4/13/01 five	Beginning	1145	74	Partly Cloudy	0-3
		Ending	1220	73	Partly Cloudy	1-3

** Not protocol due to low temperatures.

Results

On the 6.22-acre site, 5.22 acres contain previously cultivated and overgrown, non-native vegetation that is inappropriate for the QCB. In the one-acre area with potential for the QCB (the bare but muddy ground), the QCB was not observed during any of the surveys, nor were any of its larval host or nectar plants.

Conclusion

Based on the largely inappropriate site conditions, the QCB is not expected to occur. Furthermore, on similar surrounding lands under County of San Diego jurisdiction, the

USFWS has stated that site assessments and QCB surveys are not necessary because the lands are largely cultivated or overgrown with non-native vegetation.³

Because of the need for rapid completion of this emergency project, it is hoped that the USFWS can prioritize review of this document and respond within a two-week period as a submittal to the CEC is imminent. Please call me if you have any questions or comments.

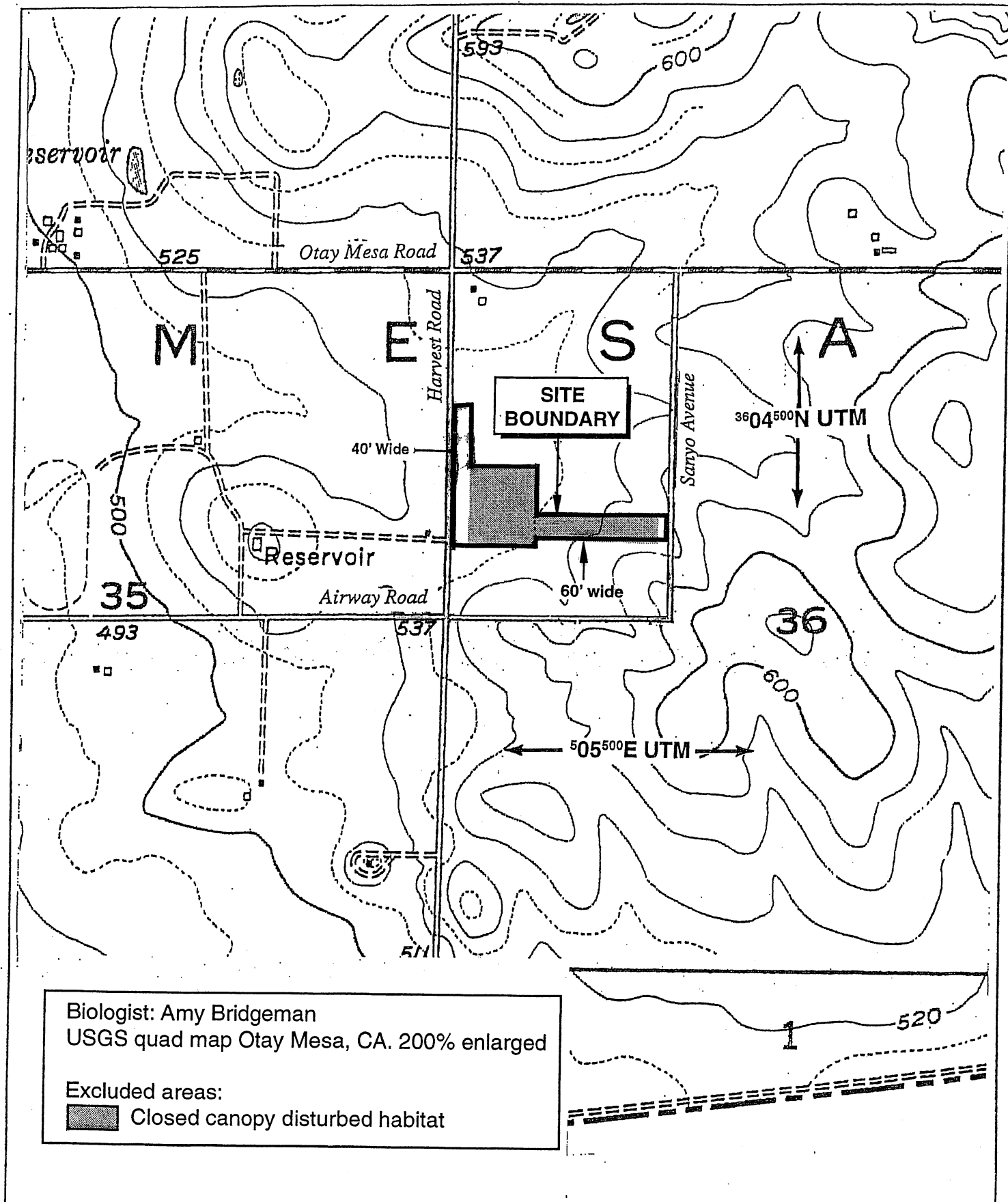
Very truly yours,

Amy Bridgeman
Environmental Analyst

cc: Christine Moen, USFWS

Enclosures: Figure 1: Site Location/Assessment Map
Appendix A: Weekly Butterfly Lists
Appendix B: Copies of Field Notes

³ Gilbert, Nancy. 2001. Letter Re: Comments on Proposed Site Assessment and Survey Areas for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) in the East Otay Mesa Specific Plan (SP 93-004). March 1.



Site Location/Assessment Map

CALPEAK #4 BORDER GENERATING STATION

Figure 1

Appendix A

WEEKLY BUTTERFLY LISTS

	Week 1	Week 2	Week 3	Week 4	Week 5
Cabbage white (<i>Artogeia rapae</i>)	---	---	---	---	X
Common white (<i>Pontia protodice</i>)	---	---	---	X	---
Lady (<i>Vannessa</i> sp.)	---	X	---	---	X
Funereal duskywing (<i>Erynnis funeralis</i>)	---	---	---	---	X
Blue sp.	---	---	---	---	X

Appendix B

FIELD NOTES
(Available Upon Request)

May 30, 2001

PAT-01.02

Field Supervisor
Attn: Ms. Nancy Gilbert
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, California 92008

Subject: Quino checkerspot butterfly habitat assessment on a 25.31-acre parcel adjacent to the proposed CalPeak #4 Border Generating Station

Dear Ms. Gilbert:

This report presents the findings of a habitat assessment for the federally listed endangered quino checkerspot butterfly (QCB; *Euphydryas editha quino*). The assessment was conducted March 1, 2001, on a 25.31-acre parcel adjacent to the proposed CalPeak #4 Border parcel and existing SDG&E substation, located within the City of San Diego, San Diego County, California (Figure 1).

This assessment was conducted per USFWS Year 2000 protocol⁴. The property is located within Survey Area 1. Under the 2000 protocol, protocol surveys are required if appropriate QCB habitat occurs on site. The site assessment confirmed that this area was not QCB habitat, as described below.

Site Description

The habitat assessment area is located south and east of the existing SDG&E Harvest Substation, between Otay Mesa Road to the north and Airway Road to the south (Figure 1). This area lies between State Route (SR) 905 and Harvest Road, to the west, and Sanyo Avenue, east of the site. The habitat assessment area does not include the footprint for the CalPeak #4 Border site, which is proposed to be developed as a 49.5-megawatt electrical generation station, in response to the California Independent System Operator's immediate need for additional electricity generation over the next three years. The project site was surveyed for QCB, and that survey report (also dated May 30, 2001) is presented under separate cover.

The assessment area, adjacent to this proposed facility, is intended as an alternate site for a 40-foot-wide utility line corridor, which could extend north-south along Sanyo Avenue. The proposed CalPeak #4 Border project is currently undergoing environmental review per the governor's 21-day emergency permitting process for electrical generating stations.

Surrounding land use in the immediate vicinity of the proposed project is primarily light industrial and includes the Casio and Sanyo buildings to the east, and the existing substation and Wildflower facility to the north. (Construction is underway for the Wildflower power plant facility, north of the existing substation.) Vacant land borders the project site to the south and also is present west of SR-905. An adjacent area within County jurisdiction, west of Alta Road and south of Otay Mesa Road, within the East Otay Mesa Specific Plan, has been identified by the USFWS, in conjunction with a meeting with the County, as largely recently cultivated or overgrown with non-native vegetation such as black mustard (*Brassica nigra*). Except for four identified areas and areas containing patches of coastal sage scrub or adjacent to slopes or hilltops containing coastal sage scrub (not true of this site), QCB assessments or surveys are not required for that similar area.⁵

⁴ U.S. Fish and Wildlife Service. 2000. Year 2000 Survey Protocol for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). 6pp., plus attachments.

⁵ Gilbert, Nancy. 2001. Letter Re: Comments on Proposed Site Assessment and Survey Areas for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) in the East Otay Mesa Specific Plan (SP 93-004). March 1.

The site and vicinity are relatively flat (Figure 1); on-site elevations range from 525 to 537 feet above mean sea level. The site historically has been used for agricultural tomato production⁶. Vegetation is dominated by non-native species, primarily mustard (*Brassica* sp.) and Russian thistle (*Salsola tragus*). The soil type on site is composed primarily of Diablo clay, with a small amount of Salinas clay, to the north (Bowman 1973).⁷

Results of the Habitat Assessment

The site, as depicted on a 7.5-minute topographic quadrangle, enlarged 200 percent (Figure 1), was surveyed for potential QCB habitat by Amy Bridgeman of HELIX. The survey consisted of walking slowly through the project area in search of QCB habitat elements such as open or sparse areas of vegetation, rock outcrops, larval food plants, and nectar sources.

No QCB habitat occurs within the survey area. A portion of the site is waterlogged, and the majority of the site is comprised of a dense cover of non-native species (primarily *Brassica* sp., although large areas of Russian thistle are present to the north). A patch of southern willow scrub is located near Sanyo Avenue, and isolated mule fat (*Baccharis salicifolia*) and other shrubs are also present.

Conclusion

As the site does not contain essential QCB habitat elements, I conclude there is no potential for QCB to occur on this site and adult QCB surveys are not recommended.

Because of the need for rapid completion of this emergency project, it is hoped that the USFWS can prioritize review of this document and respond within a two-week timeframe, as a submittal to the CEC is imminent. We appreciate your attention to this project. Please call me if you have any questions or comments regarding this submittal.

Very truly yours,

Amy Bridgeman
Environmental Analyst

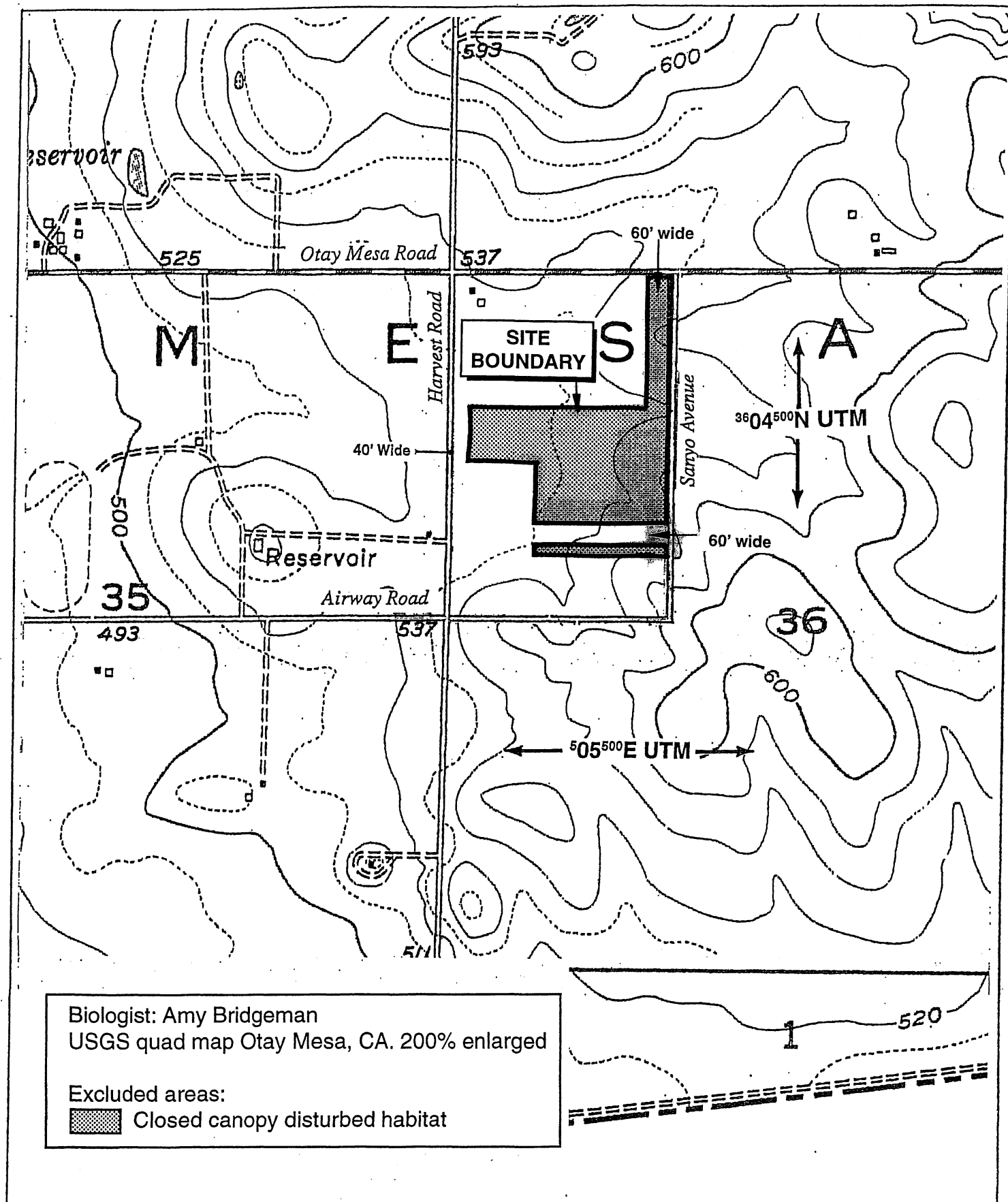
cc: Christine Moen, USFWS

Attachments:

Figure 1: Site Location/Assessment Map

⁶ Sampson, Glen. 2001. Personal Communication. May 11.

³Bowman, R.H. 1973. Soil Survey of the San Diego Area, California, Part I. United States Department of Agriculture.



Site Location/Assessment Map

CALPEAK #4 BORDER GENERATING STATION

Figure 1

Appendix B
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<u>FAMILY</u>	<u>SCIENTIFIC NAME*</u>	<u>COMMON NAME</u>	<u>HABITAT OBSERVED</u>
Dicotyledones			
Apiaceae	<i>Foeniculum vulgare*</i>	fennel	NNG, DH
Asteraceae	<i>Baccharis pilularis</i>	coyote brush	NNG, DH
	<i>Baccharis salicifolia</i>	mule fat	DW
	<i>Baccharis sarothroides</i>	broom baccharis	DH
	<i>Carduus pycnocephalus*</i>	Italian thistle	NNG, W
	<i>Chrysanthemum coronarium*</i>	garland daisy	DH
	<i>Cirsium occidentale</i> var. <i>occidentale</i>	cobwebby thistle	NNG
	<i>Cirsium vulgare*</i>	bull thistle	NNG
	<i>Conyza canadensis*</i>	horseweed	W
	<i>Lactuca serriola*</i>	wild lettuce	NNG, DH
	<i>Picris echioides*</i>	bristly ox-tongue	NNG
	<i>Silybum marianum *</i>	milk thistle	DH
	<i>Sonchus asper*</i>	prickly sow thistle	DW, NNG, DH
	<i>Viguiera laciniata</i>	San Diego County viguiera	DH
	<i>Xanthium strumarium*</i>	cocklebur	NNG, DH
Boraginaceae	<i>Amsinckia</i> sp.	fiddleneck	DH
Brassicaceae	<i>Brassica nigra*</i>	black mustard	NNG, DH
	<i>Brassica</i> sp.*	mustard	NNG, DH
Caryophyllaceae	<i>Spergularia villosa*</i>	villous sand-spurrey	DH
Chenopodiaceae	<i>Atriplex semibaccata*</i>	Australian saltbush	DH
	<i>Chenopodium murale*</i>	nettle-leaf goosefoot	DH
	<i>Salsola tragus*</i>	Russian thistle	DH
Convolvulaceae	<i>Convolvulus arvensis*</i>	bindweed	NNG
Fabaceae	<i>Melilotus</i> sp.*	sweetclover	DH
	<i>Vicia</i> sp.*	vetch	NNG
Geraniaceae	<i>Erodium cicutarium*</i>	red-stem filaree	DH
Lamiaceae	<i>Marrubium vulgare*</i>	horehound	NNG, DH
Lythraceae	<i>Lythrum hyssopifolium</i>	grass poly	DW
Malvaceae	<i>Malva parviflora*</i>	cheeseweed	DH
Myoporaceae	<i>Myoporum</i> sp.*	myoporum	W
Polygonaceae	<i>Eriogonum fasciculatum</i>	flat-top buckwheat	DH
	ssp. <i>fasciculatum</i>		
	<i>Rumex crispus*</i>	curly dock	DW
	<i>Rumex crispus*</i>		
Salicaceae	<i>Salix gooddingii</i>	Goodding's black willow	W
	<i>Salix lasiolepis</i>	arroyo willow	W

Appendix B (cont.)
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<u>FAMILY</u>	<u>SCIENTIFIC NAME*</u>	<u>COMMON NAME</u>	<u>HABITAT OBSERVED</u>
Monocotyledones			
Arecaceae	<i>Phoenix canariensis</i> *	Canary Island date palm	NNG
	<i>Washingtonia robusta</i>	Washington palm	W
Poaceae	<i>Avena barbata</i> *	slender wild oat	DH
	<i>Bromus diandrus</i> *	common ripgut grass	DH
	<i>Bromus hordeaceus</i> *	soft chess	NNG
	<i>Bromus madritensis</i> ssp. <i>rubens</i> *	foxtail chess	NNG, DH
	<i>Cortaderia jubata</i>	pampas grass	DH
	<i>Hordeum</i> sp.*	barley	DH
	<i>Lolium multiflorum</i> *	Italian ryegrass	NNG, DH
	<i>Phalaris minor</i> *	canary grass	NNG, DH
	<i>Phalaris paradoxa</i> *	canary grass	NNG, DH
	<i>Polypogon monspeliensis</i> *	annual beard grass	NNG
unknown	unknown grass	unknown grass	W

¹ Habitats: DH = disturbed habitat, DW = disturbed wetland, NNG = non-native grassland, W = wetland

* Non-native

Appendix C
NARROW ENDEMIC PLANT SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
San Diego thornmint (<i>Acanthomintha ilicifolia</i>)	FT/SE CNPS List 1B R-E-D 2-3-2 MSCP: Narrow Endemic	Clay lenses in a variety of shrub and herbaceous habitats. Range is limited to coastal areas of San Diego County and Baja California, Mexico. Annual.	April – June	Low in open areas. Would have been observed if present.
Shaw's agave (<i>Agave shawii</i>)	FSC/-- CNPS List 2 R-E-D 3-3-1 MSCP: Narrow Endemic	Coastal sage and coastal bluff scrubs. Range is limited to coastal areas of San Diego County and Baja California, Mexico. Leaf succulent.	September – May	Low. No appropriate habitat present.
San Diego ambrosia (<i>Ambrosia pumila</i>)	FPE/-- CNPS List 1B R-E-D 3-3-2 MSCP: Narrow Endemic	Disturbed areas within chaparral, coastal sage scrub, and grasslands. Occurs along floodplains of rivers and major stream courses. Range includes San Diego and Riverside counties south to Baja California, Mexico.	June – September	Would have been observed if present.
Aphanisma (<i>Aphanisma blitoides</i>)	FSC/-- CNPS List 1B R-E-D 2-2-2 MSCP: Narrow Endemic	Sandy places along the coast. Range includes islands off the coast of southern California and from San Onofre to Imperial Beach in San Diego County. Annual.	April – May	None. Plant's geographic range is outside of project area.
Coastal dunes milk vetch (<i>Astragalus tener</i> var. <i>titi</i>)	FE/SE CNPS List 1B R-E-D 3-3-3 MSCP: Narrow Endemic	Sandy places along the coast, including coastal bluff scrub and dunes. Range includes coastal areas of Monterey, Los Angeles and San Diego counties. Perennial herb.	March – May	None. Plant's geographic range is outside of project area.
Encinitas baccharis (<i>Baccharis vanassae</i>)	FT/SE CNPS List 1B R-E-D 2-3-3 MSCP: Narrow Endemic	Sandstone soils in chaparral habitat. Nearly extirpated from Encinitas area. San Diego County. Weak shrub.	August – November	None. No appropriate habitat present. Plant's geographic range is outside of project area.

Appendix C (cont.) NARROW ENDEMIC PLANT SPECIES WITH POTENTIAL TO OCCUR				
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
Otay tarplant (<i>Deinandra</i> [<i>Hemizonia</i>] conjugens)	FT/SE CNPS List 1B R-E-D 3-3-2 MSCP: Narrow Endemic	Clay soils in coastal sage scrub and grasslands. Annual.	May – June	Low. Would have been observed if present.
Short-leave live-forever (<i>Dudleya</i> <i>blochmaniae</i> ssp. <i>brevifolia</i>)	FSC/SE CNPS List 1B R-E-D 3-3-3 MSCP: Narrow Endemic	Torrey sandstone soils in chaparral and coastal scrub. Perennial herb.	April	Low. Appropriate habitat is absent and site is outside of species range.
Variegated dudleya (<i>Dudleya variegata</i>)	FSC/-- CNPS List 1B R-E-D 2-2-2 MSCP: Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, grasslands, and vernal pools. Perennial herb.	May – June	Low. Would have been observed if present.
Prostrate navarretia (<i>Navarretia fossalis</i>)	FT/-- CNPS List 1B R-E-D 2-3-2 MSCP: Narrow Endemic	Vernal pools and freshwater marsh. Limited number of populations. Range includes Riverside and San Diego counties, south to Baja California, Mexico. Annual.	April – June	None. Appropriate habitat absent.
Snake cholla (<i>Opuntia parryi</i> var. <i>serpentina</i>)	FSC/-- CNPS List 1B R-E-D 3-3-2 MSCP: Narrow Endemic	Occurs in chaparral and coastal sage scrub. Ranges from Point Loma south to Baja California. Stem succulent.	April – May	Low. Appropriate habitat absent. Would have been observed if present.
California orcutt grass (<i>Orcuttia californica</i>)	FE/SE CNPS List 1B R-E-D 3-3-2 MSCP: Narrow Endemic	Vernal pool. Ranges from Ventura County inland to Riverside County and south to Baja California, Mexico. Annual herb.	April – June	None. Appropriate habitat absent.
San Diego mesa mint (<i>Pogogyne abramsii</i>)	FE/SE CNPS List 1B R-E-D 2-3-3 MSCP: Narrow Endemic	Vernal pool species. Range is limited to central San Diego County. Annual.	April – June	None. Appropriate habitat absent.

Appendix C (cont.) NARROW ENDEMIC PLANT SPECIES WITH POTENTIAL TO OCCUR				
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
Otay mesa mint (<i>Pogogyne nadiuscula</i>)	FE/SE CNPS List 1B R-E-D 3-3-2 MSCP: Narrow Endemic	Otay Mesa vernal pool species. Ranges from southern San Diego County (mainly Otay Mesa) south to Baja California, Mexico. Annual.	May – June	None. Appropriate habitat absent.

* Explanation of listing/sensitivity can be found in Appendix G.

¹ Site has been subject to repeated disturbance and is covered with a dense cover of non-native, weedy species. Because of the history of disturbance and resultant weedy vegetation, most sensitive species have a very low potential to occur on site.

Appendix D OTHER SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR ON SITE				
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
San Diego County needle grass (<i>Achnatherum diegoense</i>)	--/-- CNPS List 4 R-E-D 1-2-1	Rocky soil and often along ephemeral streams (on the mainland) in chaparral and coastal sage scrub habitats. Perennial herb (bunch grass).	May – June	Low. Appropriate habitat absent. Would have been observed if present.
San Diego barrel cactus (<i>Ferocactus viridescens</i>)	FSC/-- CNPS List 2 R-E-D 1-3-1 MSCP: Covered Species	Dry slopes in coastal sage scrub in San Diego County and Baja California, Mexico.	May-June	Low. Appropriate habitat absent. Would have been observed if present.
California adolphia (<i>Adolphia californica</i>)	--/-- CNPS List 2 R-E-D 1-2-1	Clay soils in sage scrub, chaparral and grasslands. San Diego County and Baja California. Shrub.	December – April	Low. Appropriate habitat absent. Would have been observed if present
Dean's milk-vetch (<i>Astragalus deanei</i>)	FSC/-- CNPS List 1B R-E-D 3-3-3	Chaparral, sage scrub, and riparian forests. Perennial herb.	March – May	Low. Appropriate habitat absent. Would have been observed if present.
Golden-spined cereus (<i>Bergerocactus emoryi</i>)	--/-- CNPS List 2 R-E-D 2-2-1	Sandy substrate in chaparral and coastal scrub. San Diego County, Channel Islands, Baja California. Known from Otay Mesa area. Stem succulent.	May – June	Low. Appropriate habitat absent. Would have been observed if present.
Orcutt's bird-beak (<i>Cordylanthus orcuttianus</i>)	FSC/-- CNPS List 2 R-E-D 3-3-1	Coastal scrub. Annual herb (hemiparasitic).	March – July	Low. Appropriate habitat absent.
Tecate cypress (<i>Cupressus forbesii</i>)	FSC/-- CNPS List 1B R-E-D 3-2-2	Southern mixed chaparral and southern interior cypress forest. Evergreen tree.	N/A	Low. Appropriate habitat absent. Would have been observed if present.
Western dichondra (<i>Dichondra occidentalis</i>)	--/-- CNPS List 4 R-E-D 1-2-1	Coastal sage scrub, chaparral or southern oak woodland; often prolif- erates on recently burned slopes. Perennial herb.	March – May	Low. Appropriate habitat absent. Would have been observed if present.

Appendix D (cont.) OTHER SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR				
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
Orcutt's dudleya (<i>Dudleya attenuata</i> ssp. <i>orcuttii</i>)	FSC/-- CNPS List 2 R-E-D 3-3-1	Coastal bluff scrub and sage scrub, and chaparral. Perennial herb.	May – July	Low. Appropriate habitat absent. Known only from Border Field State Park. No succulent dudleyas observed.
Palmer's goldenbush (<i>Ericameria palmeri</i> ssp. <i>palmeri</i>)	FSC/-- CNPS List 2 R-E-D 2-2-1	Coastal sage scrub. Shrub (evergreen).	September – November	Low. Appropriate habitat absent.
San Diego button-celery (<i>Eryngium</i> <i>aristulatum</i> var. <i>parishii</i>)	FE/SE CNPS List 1B R-E-D 2-3-2	Coastal scrub, grassland, marsh and vernal pools. In mesic soils along the coast. Range includes Riverside and San Diego Counties and Baja California. Perennial herb.	April – June	Low. Would have been observed if present.
Cliff spurge (<i>Euphorbia misera</i>)	--/CEQA CNPS List 2 R-E-D 2-2-1	Rocky areas within coastal bluff and sage scrub.	January – August	Low. Appropriate habitat absent. Would have been observed if present.
Palmer's grapplinghook (<i>Harpagonella</i> <i>palmeri</i>)	FSC/-- CNPS List 4 R-E-D 1-2-1	Grasslands, chaparral, and sage scrub habitats on clay soils. Annual.	March - April	Low. Would have been observed if present.
Graceful tarplant (<i>Holocarpha virgata</i> ssp. <i>elongata</i>)	--/-- CNPS List 4 R-E-D 1-2-3	Chaparral, cismontane woodlands, coastal sage scrub, and grasslands. Annual.	August - November	Low. Would have been observed if present.
San Diego marsh-elder (<i>Iva hayesiana</i>)	FSC/-- CNPS List 2 R-E-D 2-2-1	Low-lying, moist or alkaline places along the coast. Has been reported along intermittent streams. Perennial herb.	April - September	Low. Would have been observed if present.
Southwestern spiny rush (<i>Juncus acutus</i> ssp. <i>leopoldii</i>)	--/-- CNPS List 4 R-E-D 1-1-2	Moist, saline, or alkaline areas (e.g., freshwater marsh). Perennial herb.	May -June	Low. Would have been observed if present.
Gander's pitcher sage (<i>Lepechinia ganderi</i>)	FSC/-- CNPS List 1B R-E-D 3-1-2	Coniferous forest, chap- arral, coastal sage scrub and grasslands. Shrub.	June - July	Low. Would have been observed if present.

Appendix D (cont.) OTHER SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR				
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	BLOOMING PERIOD	POTENTIAL TO OCCUR ¹
San Diego goldenstar (<i>Muilla clevelandii</i>)	FSC/-- CNPS List 1B R-E-D 2-2-2	Clay soils on dry mesas and hillsides in coastal sage scrub, chaparral, grasslands, and vernal pools. Perennial herb.	May	Low. Would have been observed if present.
Short-lobed broom-rape (<i>Orobanche parishii</i> ssp. <i>brachyloba</i>)	FSC/-- CNPS List 1B R-E-D 2-2-2	Sandy substrate in coastal bluff scrub, dunes, and scrub. Channel Islands, San Luis Obispo, and San Diego Counties and Baja California. Herb (parasitic).	May – August	Low. Appropriate habitat absent. Outside of known geographic range.
Nuttall's scrub oak (<i>Quercus dumosa</i>)	FSC/-- CNPS List 1B R-E-D- 2-3-2	Chaparral and coastal sage scrub. Santa Barbara, Orange, and San Diego Counties and Baja California. Shrub (evergreen).	February – March	Low. Appropriate habitat absent. Would have been observed if present.
Munz's sage (<i>Salvia munzii</i>)	--/CEQA CNPS List 2 R-E-D 2-2-1	Coastal sage scrub and chaparral. San Diego and Baja California. Shrub.	February – April	Low. Appropriate habitat absent. Would have been observed if present.
Parry's tetraococcus (<i>Tetraococcus dioicus</i>)	FSC/-- CNPS List 1B R-E-D 3-3-2	Chaparral and coastal sage scrub in Orange, Riverside, and San Diego Counties. Shrub (deciduous).	April – May	Low. Project area is outside known geographic range of species. Appropriate habitat absent.

*Sensitivity codes are provided in Appendix G.

¹ Site has been subject to repeated disturbance and is covered with a dense cover of non-native, weedy species. Because of the history of disturbance and resultant weedy vegetation, most sensitive species have a very low potential to occur on site.

Appendix E
ANIMAL SPECIES OBSERVED THE STUDY AREA

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Butterflies	
Anthocharis sara	Sara orangetip
Artogeia rapae	cabbage white
Erynnis funeralis	funereal duskywing
Papilio rutulus	west tiger swallowtail
Pontia protodice	common white
Vannessa annabella	west coast lady
Vannessa cardui	painted lady
Vannessa sp.	lady
blue sp.	blue
Other	
unknown ant	ant
unknown bee	bee
unknown cricket	cricket
unknown ladybug	ladybug
unknown snail	snail
unknown isopod	sowbug
VERTEBRATES	
Mammals	
unknown mouse species	mouse (dead)
Birds	
Agelaius phoeniceus	red-wing blackbird
Cathartes aura	turkey vulture
Circus cyaneus	northern harrier
Hirundo rustica	cliff swallow
Melospiza melodia	song sparrow
unknown duck species	duckling (dead)
unknown hawk species	hawk
unknown hummingbird species	hummingbird
Reptiles	
Crotalus viridis	western rattlesnake
Lampropeltis getulus californiae	California kingsnake
Pituophis melanoleucus	gopher snake (dead)
unknown lizard	lizard

Appendix F
SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	HABITAT/ DISTRIBUTION	POTENTIAL TO OCCUR
Insects			
Quino checkerspot (<i>Euphydryas editha quino</i>)	FE/--	The principal larval host plants of this species in San Diego are dot-seed plantain (<i>Plantago erecta</i>). Potential habitat for QCB in the region includes vegetation communities with relatively open areas that typically include patches of dot-seed plantain, owl's clover (<i>Castilleja exserta</i>), and nectaring plants. These habitats include vernal pools, lake margins, non-native grassland, perennial grassland, disturbed habitat, disturbed wetlands, and open areas within shrub communities.	Very low. Host plant absent from site. Surveys for QCB on site were negative.
Harbinson's dun skipper (<i>Euphyes vestris harbisoni</i>)	FSC/-- MSCP Covered	Occurs in coastal woodland meadows, bogs, and grasslands.	Not expected to occur. The host plant for this species, San Diego sedge (<i>Carex spissa</i>), was not observed on or near the site.
Thorne's hairstreak butterfly (<i>Mitoura thornei</i>)	MSCP Covered	Closely associated with food plant, Tecate cypress (<i>Cupressus forbesii</i>) and closed cone forest habitats.	Not expected to occur. Host plant not observed on or near the site.
Crustaceans			
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	FE/--	Occurs in vernal pools.	None. Appropriate habitat absent.
Riverside fairy shrimp (<i>Streptocephalus woottoni</i>)	FE/--	Occurs in vernal pools.	None. Appropriate habitat absent.
Reptiles			
San Diego horned lizard (<i>Phrynosoma coronatum blainvillei</i>)	FSC/CSC Fully protected	Prefers friable, rocky, or shallow soils in coastal sage scrub and chaparral in arid and semi-arid climates.	Not expected to occur. Appropriate habitat absent.
Orange-throated whiptail (<i>Cnemidophorus hyperythrus beldingi</i>)	FSC/CSC Fully Protected MSCP Covered	Prefers washes and other sandy areas with patches of brush and rocks for cover. Habitats include low-elevation coastal sage scrub, chaparral, and valley-foothill hardwood forests.	Not expected to occur. Appropriate habitat absent.

Appendix F (cont.) SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR			
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	POTENTIAL TO OCCUR
Reptiles (cont.)			
Silvery legless lizard (<i>Anniella nigra argentea</i>)	FSC/CSC	Burrows in loose soils, sandy washes, or leaf litter. Occurs in moist habitats of chaparral, pine, and oak woodlands, and riparian streamside growth.	Not expected to occur. Appropriate habitat absent.
Northern red diamond rattlesnake (<i>Crotalus ruber ruber</i>)	FSC/--	Occurs in coastal sage scrub, chaparral, and rocky areas.	Not expected to occur. Appropriate habitat absent.
Coastal rosy boa (<i>Lichanura trivirgata roseofusca</i>)	FSC/CSC	Occurs in coastal sage scrub, chaparral, and cactus scrub.	Not expected to occur. Appropriate habitat absent.
Western patch-nosed snake (<i>Salvadora hexalepis virgulata</i>)	CSC	Occurs in riparian woodland, coastal sage scrub, chaparral, grasslands, and desert scrub.	Low. Potential habitat highly disturbed.
Arroyo southwestern toad (<i>Bufo microscaphus californicus</i>)	FE/CSC MSCP Covered	Found in washes, streams, and arroyos in semiarid areas. Prefer shallow pools and open, sandy stream terraces or sand bars with cottonwoods, willows, or sycamores.	Not expected to occur. Appropriate habitat absent.
Western spadefoot (<i>Scaphiopus hammondi</i>)	FSC/CSC	Occurs in floodplains, washes, and low hills. Southern California habitats include coastal sage scrub, chaparral and grassland. Important habitat components include temporary pools (which form during winter and spring rains) for breeding and friable soils for burrowing. May use kangaroo rat (<i>Dipodomys</i> spp.) or other burrows for cover during hot, dry season.	Low. Potential habitat highly disturbed.
Birds			
Tricolor blackbird (<i>Agelaius tricolor</i>)	FSC/CSC	Occurs mostly in coastal lowland grasslands and wetlands.	Low. Would have been detected if present.
Bell's sage sparrow (<i>Amphispiza belli belli</i>)	FSC/CSC	Occurs in coastal sage scrub and chaparral.	Not expected to occur. Appropriate habitat absent.
Burrowing owl (<i>Athene cunicularia</i>)	--/CSC MSCP Covered	Occurs in deserts, scrublands, and open, dry grasslands with low-growing vegetation. Utilizes the burrows of other fossorial animals.	Low. No burrows or potential burrows were observed during survey. Would have been detected if present.

Appendix F (cont.) SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR			
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	POTENTIAL TO OCCUR
Birds (cont.)			
Sharp-shinned hawk (Accipiter striatus)	--/CSC	Occurs in all woodland habitats. Winter migrant in San Diego County.	Not expected to occur. Appropriate habitat absent.
Ferruginous hawk (Buteo regalis) (wintering)	FSC/CSC	Forages over open grasslands and agricultural fields.	Low. Not present regionally during spring season.
San Diego cactus wren (Campylorhynchus brunneicapillus sandiegensis)	--/CSC	Occurs in large stands of Opuntia sp. And other cactus species.	Not expected to occur. Preferred habitat not present.
Mountain plover (Charadrius montanus)	--/CSC	Found in short statured grasslands and fields.	Not expected to occur. A rare visitor to San Diego County during winter, found in short statured grasslands and fields. Not present regionally during spring season.
Merlin (Falco columbarius)	--/CSC	Rare visitor to coastal areas of San Diego County in winter.	Low potential to occur. Species is not expected to breed in the area.
Prairie falcon (Falco mexicanus)	--/CSC	An uncommon visitor to grasslands and desert areas of San Diego County.	Not expected to occur. An uncommon visitor to grasslands and desert areas of San Diego County.
Peregrine falcon (Falco peregrinus)	FE/SE	Rare fall and winter visitor. Prefers various coastal habitats for foraging and breeding.	Not expected to occur. Rarely occur inland and are typically not present regionally between April and September.
Coastal California gnatcatcher (Polioptila californica californica)	FT/CSC	Occurs in coastal sage scrub.	Not expected to occur. Appropriate habitat absent.
Mammals			
Pallid bat (Antrozous pallidus pacificus)	--/CSC	Roosts in caves, mines, bridges, crevices, and abandoned buildings, and trees.	Not expected to occur. Appropriate habitat absent. Could forage throughout the site, but potential roosting sites absent. Focused surveys not warranted.

Appendix F (cont.) SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR			
SPECIES	STATUS*	HABITAT/ DISTRIBUTION	POTENTIAL TO OCCUR
Mammals (cont.)			
Spotted bat (<i>Euderma maculatum</i>)	FSC/CSC	Occurs in arid country. Preferred roosts are cliffs. Occasionally enters buildings or caves.	Low. Potential roosting sites absent but could forage on site.
Greater western mastiff bat (<i>Eumops perotis californicus</i>)	--/CSC	Occurs in chaparral and oak woodland with coast live oaks and in arid, rocky areas. Roosts on or in buildings, crevices in cliffs, in trees, and in tunnels.	Not expected to occur. Appropriate habitat absent.
Yuma myotis (<i>Myotis yumanensis</i>)	FSC/CSC	Occurs in arid areas. Roosts in caves, tunnels, or buildings.	Low. Roosting sites absent.
Townsend's big-eared bat (<i>Plecotus townsendii pallescens</i>)	-/CSC	Roosts in caves, mine tunnels, and buildings.	Low. Roosting sites absent.
Dulzura California pocket mouse (<i>Chaetodipus californicus femoralis</i>)	FSC/CSC	Occurs in dense chaparral, but occasionally other shrublands.	Not expected to occur. Appropriate habitat absent.
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	FSC/CSC	Occurs in coastal sage scrub and ruderal areas, often in sandy washes., i.e. open sandy land with weeds.	Not expected to occur. Cultivation and soil texture inhospitable for this species.
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	FSC/CSC	Occurs in coastal sage scrub and other xeric habitats. Inhabits open or semi-open country from the coast to the foothills.	Not expected to occur. Appropriate habitat absent.
Southern grasshopper mouse (<i>Onychomys torridus ramona</i>)	FSC/CSC	Occurs in all arid habitats including all shrublands.	Not expected to occur. Appropriate habitat absent.
Pacific little pocket mouse (<i>Perognathus longimembris pacificus</i>)	FE/CSC	Found in coastal sage scrub, but more often in sandy washes. Known currently from one location in Orange County and one on Camp Pendleton.	Not expected to occur. Appropriate habitat absent.

*Sensitivity codes are provided in Appendix G.

Appendix G

EXPLANATION OF STATUS CODES FOR PLANTS AND ANIMALS

U.S. FISH AND WILDLIFE SERVICE (USFWS)

FE	Federal-listed endangered
FT	Federal-listed threatened
FPE	Federal-proposed endangered
FPT	Federal-proposed threatened
FPD	Federal-proposed for delisting
FC	Federal candidate species (former Category 1 candidates)
FSC	Federal special concern species (a "term of art" for former Category 2 candidates)
MBTA	Migratory Bird Treaty Act

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)

SE	State-listed endangered
SR	State-listed rare
ST	State-listed threatened
SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
CSC	California special concern species
Fully Protected and Protected	Fully protected and Protected species may not be taken or possessed without a permit and from the Fish and Game Commission and/or the Department of Fish and Game

WATCH LIST

The Watch List (compiled by the Audubon Society and partners in Flight) identifies species are those faced with population decline, limited geographic range, and/or threats such as habitat loss on their breeding and wintering grounds serving as an early warning system that focuses attention on at-risk bird species before they become endangered.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

CALIFORNIA NATIVE PLANT SOCIETY (CNPS)

LISTS	R-E-D CODE
1A = Presumed extinct.	R (Rarity)
1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.	1 = Rare but found in sufficient numbers and distributed widely enough that potential for extinction is low at this time.
2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.	2 = Occurrence confined to several populations or to one extended population.
3 = Distribution, endangerment, and/or taxonomic information needed.	3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.
4 = A watch list for species of limited distribution. Needs monitoring for changes in population status.	E (Endangerment)
	1 = Not endangered
	2 = Endangered in a portion of its range
	3 = Endangered throughout its range
	D (Distribution)
	1 = More or less widespread outside California
	2 = Rare outside California
	3 = Endemic to California

APPENDIX K

FIRE DEPARTMENT WILL SERVE LETTER



701 "B" Street , Suite 340 • San Diego, CA 92101
Tel: 619.239.1212 **Fax:** 619.239.1307 **Email:** calpeak@cchinckley.com

June 5, 2001

Mr. Bob Medan
Deputy Fire Marshal
Planning and Development Review
City of San Diego
1222 First Avenue, Fourth Floor
San Diego, CA 92101-4154

Sent via facsimile: (619)236-6810

RE: APN 6461304600

Dear Mr. Medan:

Thank you for working with CalPeak Power representatives to review the proposed site for the 49.5 megawatt peaking power facility we are seeking to build in the Otay Mesa area of the City of San Diego. We are writing to confirm that the San Diego Fire Department has the ability to serve our project, located on the above-reference parcel number.

Please confirm with your signature below that the San Diego Fire Department will serve the CalPeak plant from Fire Station #43, located at Otay Mesa Road and La Media, approximately one mile from the plant. Station 43 is staffed 24 hours per day, seven days per week, by a four-person crew, including three Emergency Medical Technicians and one firefighter/paramedic, and utilizing one engine, one truck, one brush rig and one P-19 crash rig.

Thank you for your assistance.

Sincerely,


Charles C. Hinckley
Project Director



R. D. Medan, Deputy Fire Marshal, City of San Diego

6.6.01

Date

APPENDIX L
CULTURAL RESOURCES REPORT

**CULTURAL RESOURCE SURVEY FOR THE
CALPEAK BORDER #4 PROJECT
CITY OF SAN DIEGO, CALIFORNIA**

Report Prepared for:
Helix Environmental Planning, Inc.

May 2001

Kyle Consulting

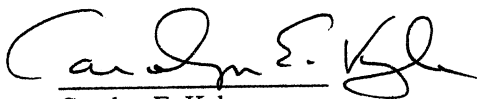
**CULTURAL RESOURCE SURVEY FOR THE
CALPEAK BORDER #4 PROJECT
CITY OF SAN DIEGO, CALIFORNIA**

Prepared for:
Helix Environmental Planning, Inc.
8100 La Mesa Boulevard, Suite 150
La Mesa, California 92941-6452
(619) 462-1515

Prepared by:
Kyle Consulting
2495 Bartel Place
San Diego, California 92123
(858) 569-0534

National Archaeological Data Base Information

Type of study: Literature review, record search, and field survey
Area surveyed: Approximately 20 acres
Sites previously recorded within the study area: CA-SDI-10072
Sites newly identified: None
USGS Quadrangle: Otay Mesa 7.5'
Key Words: Negative survey, no additional work recommended



Carolyn E. Kyle
Project Archaeologist

May 2001

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EXECUTIVE SUMMARY

TITLE: Cultural Resource Survey for the
CalPeak Border #4 Project
City of San Diego, California

AUTHOR: Carolyn E. Kyle
Kyle Consulting
2495 Bartel Place
San Diego, California 92123

DATE: May 2001

SOURCE OF COPIES: South Coastal Information Center
San Diego State University
San Diego, California 92182-0136

ABSTRACT:

This study included a literature review, record search, and field survey of an approximately 30-acre study area. The study was conducted in compliance with City of San Diego and California Environmental Quality Act (CEQA) requirements. The study area is located south of Otay Mesa Road, east of Harvest Road, and west of Sanyo Avenue, near the United States/Mexico International border. Record search information from the South Coastal Information Center (SCIC) at San Diego State University shows site CA-SDI-10072 as a long narrow site that is partially located within the western portion of the study area. The site record information on file at SCIC states that the actual location of the site and the person who recorded it are unknown. No cultural material was identified within the study area by previous studies conducted by Carrico (1974), Wade (1985), Hector (1987), and Kyle and Gallegos (1987) or during the current survey. No additional cultural resource work is recommended for the proposed project.

SECTION 1

INTRODUCTION

1.1 PROJECT DESCRIPTION

The current study was completed for the proposed CalPeak Border #4 project in compliance with City of San Diego and California Environmental Quality Act (CEQA) requirements. The study area is located in the southern portion of San Diego County near the United States/Mexico International Border (Figure 1-1). The project area is shown on the Otay Mesa, California (1968) 7.5' USGS topographic map (Figure 1-2). The project is located south of Otay Mesa Road, east side of Harvest Road, west of Sanyo Road, and north of Airway Road, just south of an existing SDG&E substation.

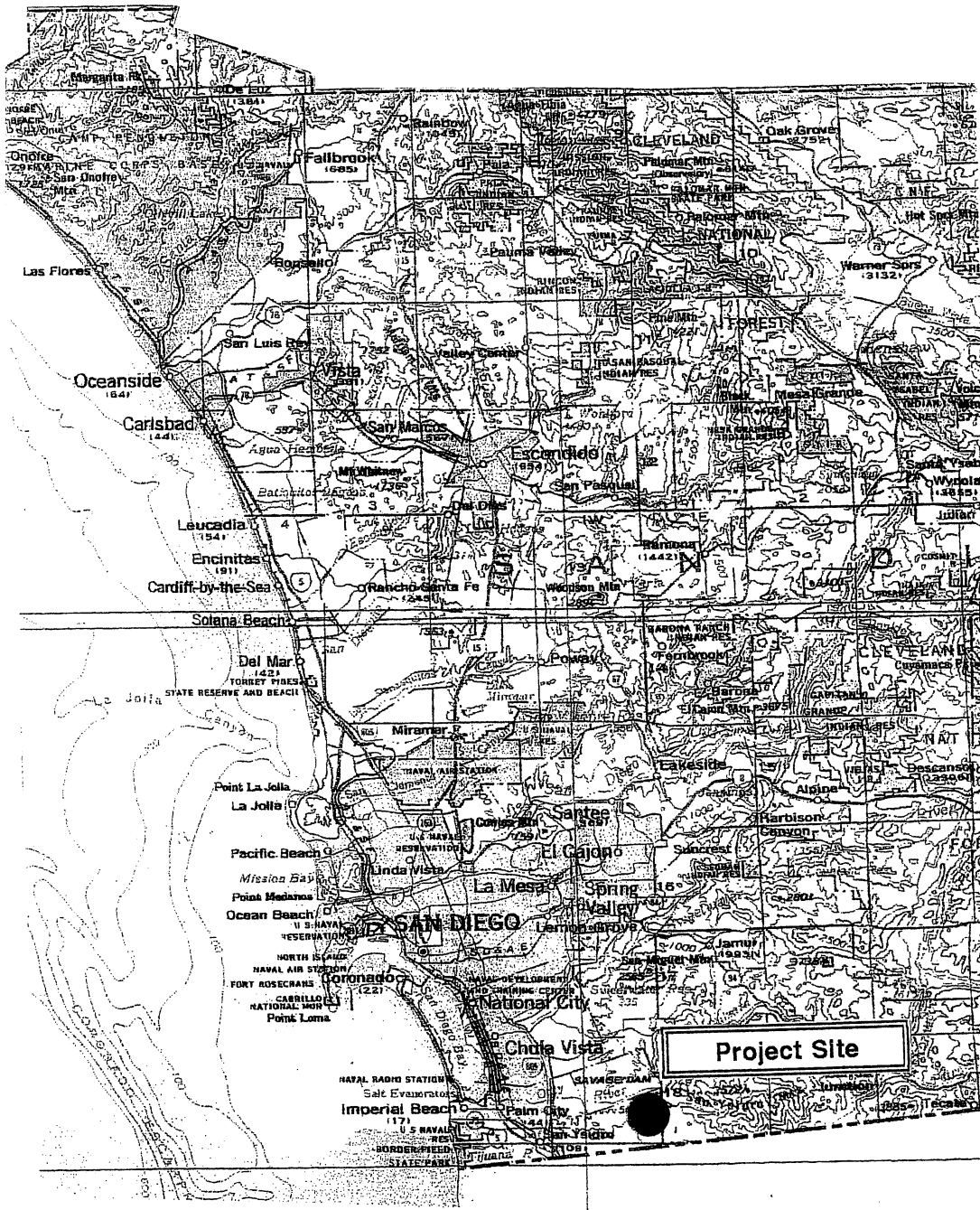
This study included a literature review, record search, and field survey for the project area. Literature information and site forms for recorded cultural resources within a one-mile radius of the study area were obtained from the South Coastal Information Center at San Diego State University and the San Diego Museum of Man (Appendix A). In addition, early maps were reviewed for historic resources. The resume of Ms. Kyle is included as Appendix B.

1.2 ENVIRONMENTAL SETTING

The study area is a level parcel that is currently undeveloped. Vegetation consists primarily of introduced grasses with riparian habitat located along an east/west trending drainage. Soil within the study area is mapped as Diablo clay loam with 2 to 9 percent slopes and Salina clay with 0-2 percent slopes. Diablo series soils are well drained, moderately deep clay loams derived from soft calcareous sandstone and shale. Salinas clay soils consist of well drained and moderately well drained clay loams that formed in sediments washed from other soils (United States Department of Agriculture 1973).

1.3 BACKGROUND - PREHISTORY

Archaeological studies have identified Native American occupation of San Diego County for at least 9,000 years. Controversy surrounds what cultural groups lived in San Diego County, the chronology of cultural occupations, and the subsistence practices of these

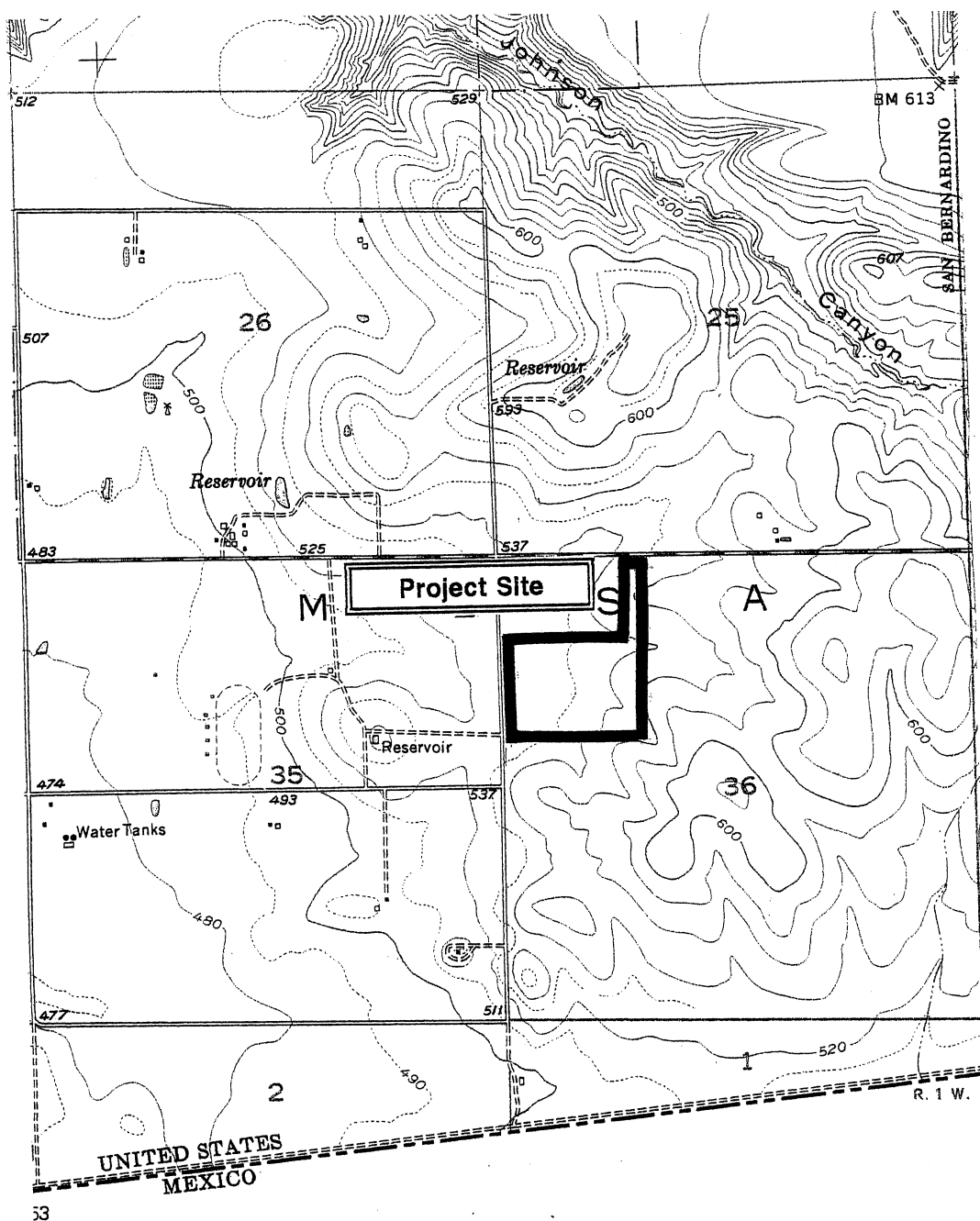


Not to Scale



Source: United States Department of the Interior Geological Survey, State of California, South Half

Figure 1-1 Regional Location of the Project Site



Scale: 1:24,000

Source: USGS 7.5' Otay Mesa, California Quadrangles



Figure 1-2 Project Location Map

people. Many archaeologists believe that the county was occupied prehistorically by at least two major cultural groups. The earliest of these people have been identified as the San Dieguito who are believed to have entered San Diego County from the desert. These early people hunted, fished, milled plant foods, and collected and processed shellfish. The continuation of this occupation to roughly 1,300 years ago, has been termed by various researchers as La Jolla Complex, Pauma Complex, and Encinitas Tradition. Artifacts and cultural patterns associated with Early Period occupation include large dart or atlatl points, obsidian from the Coso Range in north central California, inhumation of the dead, and an absence of pottery.

Late period occupation from 1,300 years ago to historic contact is well documented in San Diego County. Artifacts and cultural patterns reflecting the Late Period occupation include small projectile points, pottery, obsidian from Obsidian Butte located near the Salton Sea in the desert, and cremation of the dead. Early Hispanic explorers referred to the people living in the central and southern portions of the county as Kumeyaay/Diegueño after the Mission San Diego de Alcalá, and the people living in northern San Diego County as Luiseño after the Mission San Luis Rey de Francia. Agua Hedionda Lagoon, located in northern San Diego County north of the City of Carlsbad, is traditionally considered as the point of separation between Diegueño and Luiseño territories. The current study area is located in what is considered to be traditional Diegueño territory (Kroeber 1925).

1.5 RECORD SEARCH RESULTS

The literature review and record search included information on file at the South Coastal Information Center at San Diego State University and the San Diego Museum of Man (Appendix A). The literature review and record searches show that the study area has been surveyed by Carrico (1974), Wade (1985), Hector (1987), and Kyle and Gallegos (1987). No cultural resources were identified by these studies. However, site CA-SDI-10072 is shown on the SCIC maps as a long narrow site located along the western edge and extending west of the study area. The site record form states, "The location for this site is recorded on the map but no site form was filed with the Information Center." CA-SDI-10072 has been combined with sites CA-SDI-5352, CA-SDI-9974, CA-SDI-10735 under the new number CA-SDI-12337 (the Lonestar Site).

Cultural resource studies that have been completed within a one-mile radius of the study area include: Carrico (1974), Cupples and Eidsness (1978), Hector (1983, 1984), Recon (1983, 1990), Cheever and Gallegos (1986), Rosen (1990), Latas (1991), Alter (1992), Kyle and Gallegos (1992 a, b, c, d, e, f, g, h), Rosen and Krafts (1993), Serr and Saunders (1994), and Van Buren and Walter (1994).

Previously recorded sites within a one-mile radius include: CA-SDI-507/CA-SDI-509/SDM-W-5277a, b, c; CA-SDI-508/SDM-W-527; CA-SDI-8054/SDM-W-2625; CA-SDI-8056/SDM-W-2626; CA-SDI-8057/SDM-W-2627; CA-SDI-8058/SDM-W-2628; CA-SDI-8059/SDM-W-2629; CA-SDI-8060/SDM-W-2630; CA-SDI-8061/SDM-W-2631; CA-SDI-8062/SDM-W-2632; CA-SDI-8063, CA-SDI-9098, CA-SDI-9099, CA-SDI-9100, CA-SDI-9975/SDM-W-5456, CA-SDI-10071, CA-SDI-10735/SDM-W-5493, CA-SDI-11049/SDM-W-3998; CA-SDI-12337/-5352/-9974/-10735/-10072/SDM-W-1804, CA-SDI-12730/SDM-W-456, CA-SDI-12872/SDM-W-5277, CA-SDI-12873/SDM-W-5276, CA-SDI-12879, and CA-SDI-12885. The majority of these sites are part of a sparse lithic scatter that covers Otay Mesa. This sparse lithic scatter has been extensively tested and identified as not significant. Sites CA-SDI-9975 and CA-SDI-10735 have been identified as prehistoric quarries.

SECTION 2

SURVEY RESULTS AND RECOMMENDATIONS

2.1 SURVEY RESULTS AND RECOMMENDATIONS

A field survey of the study area was conducted on May 11 and 16, 2001 by Carolyn Kyle and Robert Kyle. Dense vegetation had been cut within the study area by the time of the May 16th survey, allowing approximately 50 percent ground visibility. The study area was carefully surveyed with transects of less than 10 m between field personnel.

The study area was surveyed by Carrico (1974), Wade (1985), Hector (1987), and Kyle and Gallegos (1987). No cultural resources were identified during the surveys. A portion of prehistoric site CA-SDI-10072, a long narrow resource, is shown on site record maps at SCIC in the western portion and extending west of the study area. However, information from SCIC states that the exact location of this site and the person who recorded it are unknown. No cultural material was identified during the survey and no additional cultural resource work is recommended for the proposed project.

SECTION 3

REFERENCES CITED

Alter, Ruth

- 1992 Cultural Resources Survey for the SDG&E Project, Vencinos Gas Pipeline, Otay Mesa, San Diego, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Carrico, Richard

- 1974 Archaeological Survey of the Proposed Otay Mesa International Border Crossing. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Cheever, Dayle and Dennis Gallegos

- 1986 Cultural Resource Survey for Gr-Otay, Otay Mesa, San Diego, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Cupples, Sue Ann and Janet Eidsness

- 1978 Wetmore Lot Split, Otay Mesa, California TPM 14166, Log #77-19-89, Archaeological Survey, Testing, and Surface collection at SDI-5352. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Hector, Susan

- 1983 Report on the Excavation of SDI-9098 and SDI-9099, Located on Otay Mesa Near the International Border. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1984 Otay 22-Acre Archaeological Survey. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1987 Cultural Resources for Airway International Business Park. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Kyle, Carolyn E. and Dennis R. Gallegos

- 1987 Cultural Resource Survey of the Straza Property, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- # 1992a Archaeological Testing for a Portion of CA-SDI-5352 Located within the Struthers Trust #3 Parcel, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992b Archaeological Testing for Sites CA-SDI-10067, CA-SDI-12880, and CA-SDI-12881 Located within Parcel No. 646-130-42, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992c Archaeological Testing for a Portion of CA-SDI-5352 Located within the Zinser-Furby Parcel, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992d Archaeological Testing for a Portion of CA-SDI-5352 Located within the Robert Eggar, Jr. Parcel, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992e Archaeological Testing for a Portion of CA-SDI-5352 Located within the George Ellis Parcel, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992f Historical/Archaeological Survey and Testing for CA-SDI-5352 and CA-SDI-12730, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992g Archaeological Testing for a Portion of CA-SDI-5352 Located within Parcels 646-246-31 and 646-240-28, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.
- 1992h Archaeological Testing for a Portion of CA-SDI-5352 Located within the Roll Propoerty, Otay Mesa, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Kroeber, Alfred L.

- 1925 *Handbook of the Indians of California* (first edition). Bureau of American Ethnology Bulletin 78. Washington, D.C.

Latas, Timothy W.

- 1991 Cultural Resources Survey, Otay Mesa Road Pipeline Project (9,500 Linear Feet), San Diego, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Recon

- 1983 Draft Environmental Impact Report for Otay International Center Specific Plan and Tentative Subdivision Map. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Rosen, Martin D.

- 1990 Archaeological Survey Report for Proposed State Route 125 from State Route 905 (Near the Second Border Crossing) to State Route 54 (Near the Sweetwater Reservoir), San Diego County, California. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Rosen, Martin D. and Karen C. Krafts

- 1990 Negative Archaeological Survey Report for Construction of Class A Truck Inspection Station at Otay Mesa International Border Crossing, San Diego County. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Serr, Carol and Dan Saunders

- 1994 Phase II Archaeological Evaluation of the Lonestar Site (CA-SDI-12337) in the SR 125 Project Corridor, Otay Mesa, San Diego County. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Van Buren, Thad M. and Susan D. Walter

- 1994 Historical Study Report for the Root Homestead and Yamamoto Farm Workers Camp I-125 Project. Unpublished report on file at the South Coastal Information Center, San Diego State University.

Wade, Sue A.

- 1926 Archaeological Survey of the Proposed SDG&E Border substation Property. Unpublished report on file at the South Coastal Information Center, San Diego State University.

United States Department of Agriculture

- 1973 Soil Survey, San Diego Area, California. United States Department of the Interior.

APPENDIX A

RECORD SEARCH RESULTS

(Bound Separately in Confidential Appendix)

APPENDIX B

KEY PERSONNEL RESUME

CAROLYN E. KYLE
Kyle Consulting
Cultural Resource Management

2495 Bartel Place, San Diego, California 92123

(858) 569-0534

EDUCATION

M.A. Anthropology, San Diego State University, 1988
B.A. Anthropology, San Diego State University, 1983

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists (formerly Society of Professional Archeologists)
Society for American Archaeology
Society for California Archaeology
San Diego County Archaeological Society

PROFESSIONAL EXPERIENCE

Kyle Consulting

June 1998 to Present

Ms. Kyle has completed a cultural resource survey and preparation of a report of finding for the Otay Water District; data recovery programs for a portion of CA-SDI-48, located within the Ballast Point Submarine Base; and site CA-SDI-11424, located on Otay Mesa; and constraint level studies for large areas in Escondido, Valley Center, and Otay Mesa. These studies were completed in compliance with state, federal, County of San Diego, and City of San Diego guidelines.

Ms. Kyle is currently completing work for the portions of a fiberoptics alignment that are located in the states of California, Arizona, and Nevada. This study includes record searches, field surveys, and preparation of required documents and reports for each alignment. Review agencies include State Office of Historic Preservation, Caltrans, the Bureau of Land Management, and various Cities and Counties. These studies will be completed in compliance with Section 106 and local guidelines.

Gallegos & Associates

October 1991 to June 1998

Ms. Kyle, as senior archaeologist at Gallegos & Associates, completed a full range of cultural resource studies. Duties included preparation of research designs and supervision of projects with the authority to direct fieldwork and subcontract to appropriate research consultants, as well as preparation of a report of finding for each project.

Projects completed in compliance with federal Section 106 guidelines include: a test of one prehistoric and two historic cultural resources for the Rancho del Oro Road/Highway 78 interchange project, surveys and testing programs for Camp Pendleton Housing, Naval Weapons Station Seal Beach, North Torrey Pines Bridge, and State Route 905. The State Route 905 project included preparation of a testing program research design for a large habitation site and a management plan that set criteria for determination of Otay Mesa site types and provided recommendations for future work on Otay Mesa.

Ms. Kyle served as Project Archaeologist for the following projects that were completed for Caltrans: the State Route 905 survey and test; survey and test programs for the Rancho del Oro/Highway 78 interchange project and the Twin Oaks Valley Road/Highway 78 interchange project; and surveys for the North Torrey Pines Bridge widening project; and the Leucadia Boulevard/Interstate 5 interchange project. The cultural resources located within the proposed

impact area of the Rancho del Oro Road/Highway 78 interchange project include a standing adobe and the location of a melted adobe.

Projects completed in compliance with City of San Diego and CEQA guidelines include surveys for the San Diego Bikeways project, the Tijuana Trolley Transport Pedestrian Path and Border Gate project in San Ysidro; a constraint level analysis for the San Ysidro Redevelopment project, a data recovery program for the East Mission Gorge Pump Station, a monitoring program for construction of the East Mission Gorge Force Main, surveys for Pipelines 2A and 4, test of three sites for the Kumeyaay Lake Campground, and a data recovery program of a prehistoric habitation site for the Remington Hills project in Otay Mesa.

Ms. Kyle has served as Project Archaeologist for a number of projects completed in compliance with the County of San Diego and CEQA guidelines. These projects include surveys for the proposed Valley Center Sewerage and Water Reclamation Facilities, the Pomerado Reclamation Plant, and the Julian Water Control Facilities; a testing program of two prehistoric and two historic resources for the proposed widening of Valley Center Road; and a data recovery program for the proposed Skyline Church project.

Ms. Kyle served as Project Archaeologist for a significance testing program of a prehistoric site located on property owned by the University of California at San Diego (UCSD). Ms. Kyle also assisted historian Roxana Phillips with a significance assessment of buildings associated with historic Camp Matthews, located within the campus.

Additional projects completed include: a study with Ms. Phillips of the Spanish Landing area for the Port of San Diego, a survey for the Vista Irrigation District Potable Water and Water Reclamation project, an overview study for the City of Escondido, and a field survey for the widening of Carlsbad Boulevard.

County of San Diego

February 1989 to October 1991

Environmental Analyst for the Department of Planning and Land Use/Archaeological Specialist. Duties included initial review of submitted projects, determination of required environmental studies, review of submitted studies, and presentation of determination and subsequent findings to the County Board. Reviewed archaeology reports submitted by consultants in response to County determinations. Responsible for report review and recommendations for cultural resource work necessary for the proposed 22,000-acre Otay Ranch project.

ERC Environmental and Energy Services Company

1985 to February 1989

Project Archaeologist responsible for direction of cultural resource surveys, test excavations, and data recovery programs. Major projects include the data recovery program for Ballast Point, Batiquitos Ridge, Kuebler Ranch - Otay Mesa, San Diego Mission, and Westwood Valley. Responsible for direction of field and laboratory crews, coordination of artifact analysis, and principle author of reports of findings.

Archaeological Consultant

1983 to 1985

Archaeological consultant with various firms including WESTEC, RECON, RBR & Associates, and Brian F. Mooney & Associates. Positions for these firms included both laboratory and field crew member for: Johnson-Taylor Adobe, under the supervision of Dr. Susan Hector, RECON; Fieldstone Northview, Unit 4, Encinitas, under the supervision of Dennis Gallegos, WESTEC; data recovery program for a large prehistoric village at Sabre Springs, Poway, under the direction of Sean Cardenas, RBR & Associates.

MAJOR REPORTS

- 1999 Cultural Resource Survey for the Sycamore Estates Project, Cities of San Diego and Poway, California. Prepared for the City of San Diego.
- 1999 Cultural Resource Constraint Study for the Valley Center Sewer Moratorium EIR Project County of San Diego, California. Prepared for the County of San Diego.
- 1997 SR 905 Cultural Resource Inventory and Evaluation. Overview and testing program to identify and evaluate properties to determine National Register status of cultural resources within the proposed APE. Prepared for the City of San Diego and Caltrans.
- 1995 Archaeological Testing of Seven Sites for the Stardust Golf Course Realignment Project. A significance test of cultural resources located adjacent the San Diego River. Prepared for the City of San Diego.
- 1995 Otay Mesa Road Widening Project Cultural Resources Technical Report: Archaeological testing of nine cultural resources. Prepared for the City of San Diego.
- 1994 Remington Hills Project: Archaeological Testing of Seven Sites Otay Mesa, San Diego, California. Archaeological significance testing of seven prehistoric sites. Prepared for the City of San Diego.
- 1994 Historical/Archaeological Test for the Casa de Aguirre Adobe Site, City of San Diego, California. A test using mechanical and hand excavation to identify presence/absence of remains of the Casa de Aguirre adobe. Prepared for the City of San Diego.
- 1994 Cultural Resource Survey and Test for the California Department of Corrections, R. J. Donovan-II Correctional Facility Project, Otay Mesa, San Diego County, California. A literature review, record search, and 174-acre field survey that identified the presence of previously recorded site CA-SDI-8654. A subsequent significance test was completed for the portion of the site located within the project area. Prepared for the California Department of Corrections.
- 1993 Data Recovery Program for a Portion of Prehistoric Site CA-SDI-10148 East Mission Gorge Pump Station and Force Main, San Diego, California. A data recovery program to mitigate impacts to portions of CA-SDI-10148, identified as significant after construction was begun. Analysis of recovered artifacts identified a 2,000 year old milling tool kit. Prepared for the City of San Diego.
- 1993 Archaeological Evaluation of Prehistoric Sites CA-SDI-11606, CA-SDI-11057A, and CA-SDI-11057B Kumeyaay Lake Campground, San Diego, California. A significance test prepared for the City of San Diego.
- 1993 Cultural Resource Survey and Test of Five Sites for the Otay Water District Central Area and Otay Mesa Interconnection Pipeline Alignments. A significance test that identified one significant and four not significant cultural resources. Prepared for the Otay Water District.
- 1993 A Constraint Study for the Otay Valley Regional Park FPA. This study included a literature review, record search, identification of constraints and opportunities, and recommendations for the proposed Otay Valley Regional Park.
- 1993 Historical/Archaeological Test Report for Sites CA-SDI-9775, CA-SDI-9775, CA-SDI-13187, and CA-SDI-13188 East County Square Development San Diego County, California. A significance test prepared for the County of San Diego.

- 1992 Historical/Archaeological Survey and Testing for CA-SDI-5352 and CA-SDI-12730, Otay Mesa, San Diego, California. A testing program for a 250-acre parcel on Otay Mesa.
- 1991 Six Thousand Years of Occupation at Batiquitos Ridge. Report involved excavation of a five percent phased sample inventory to provide mitigation of development impacts.
- 1990 Early Period Occupation at the Kuebler Ranch Site SDI-8654, Otay Mesa, San Diego County, California. A data recovery program for a 7,000 year old site on Otay Mesa prepared for the County of San Diego.
- 1988 Cultural Resource Inventory and CEQA Test for Site Importance, Rancho Bernardo Lake Course. Inventory of 315 acres, identification and testing of ten prehistoric sites for the J. W. Colachis Company.
- 1988 Cultural Resource Survey and Testing Program for the East Mesa Detention Facility, San Diego California. Project involved the survey of 523 acres, the identification and testing of eight prehistoric and one historic site. Three of these sites were quarry localities on Otay Mesa. Report prepared for the County of San Diego.
- 1988 Five Thousand Years of Maritime Subsistence at Ballast Point Prehistoric Site SDI-48 (W-164), San Diego, California. Report involved the excavation of a 2.5 percent sample within a coastal shell midden site, dated from 6000 to 1500 years before present. Report prepared for the U.S. Navy.
- 1987 Cultural Resource Inventory for Rancho La Quinta. Inventory of 1272 acres identifying six prehistoric sites within Coachella Valley, Riverside County, California. Report prepared for the Landmark Land Company.
- 1986 Archaeological Investigation at Westwood Valley, San Diego, California. Ten sites located within the Westwood Valley, Rancho Bernardo in San Diego, County.

P U B L I C A T I O N S

Five Thousand Years of Maritime Subsistence at Ballast Point Prehistoric Site SDI-48 (W-164), San Diego, California. In press.

A 2,000 Year Old Milling Tool Kit from CA-SDI-10148, San Diego, California. In: *Proceedings for California Archaeology*, Vol. 8, 1995

An Overview of the Late Prehistoric Village in the Westwood Valley, Rancho Bernardo, California in *Proceedings of the Society for California Archaeology*.

P R O F E S S I O N A L P A P E R S P R E S E N T E D

"An Overview of the Ballast Point Data Recovery Program at Site SDI-48, San Diego, California." Paper presented at the Society for California Archaeology Meetings, City of Commerce, California.

"An Overview of the San Diego Mission Excavations." Paper presented at the San Diego County Archaeology Society.

"An Overview of the Late Prehistoric Village in Westwood Valley, Rancho Bernardo, California." Paper presented at the Society for California Archaeology Meetings, Fresno, California.

"An Overview of the Prehistoric Village in Westwood Valley, Rancho Bernardo, California." Paper presented at the San Diego County Archaeological Society.

"A 2,000 Year Old Tool Kit from CA-SDI-10148, San Diego California." Paper presented at the Society for California Archaeology Meetings, Ventura, California.

"A Prehistoric Milling Tool Kit from CA-SDI-10148, San Diego, California." Paper presented at the Society for California Archaeology Meetings, Ventura, California.

REFERENCES

Gary Fink
Supervisor
County of San Diego
Department of Public Works
Environmental Services
Building 6, Operations Center
5555 Overland Avenue
San Diego, CA 92123
(619) 874-4007

Myra Hermann
City of San Diego Development Services Department
1222 First Avenue
San Diego, CA 92101
(619) 236-6521

Marty Rosen
Caltrans District 11
2829 Juan Street
San Diego, CA 92103
(619) 688-6751

APPENDIX M

NATIVE AMERICAN HERITAGE COMMISSION

- M.1 - Letter to NAHC
- M.2 - Letter from NAHC
- M.3 - Letters to Native American Contacts

APPENDIX M.1
LETTER TO NAHC



Customer-Focused Solutions

May 31, 2001

Project No. 31765

Mr. Rob Wood
Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, California 95814

Request for Record Search
CalPeak Border Project

Dear Mr. Wood:

This letter is written on behalf of CalPeak Power - Border, LLC (CalPeak), who is developing a power generating project in the south-central portion of San Diego County, in the Otay Mesa area, near the international border (see Figure 1). This is a request for a record search of the Sacred Lands File and list of Native American contacts for the proposed project. CalPeak proposes to construct a new facility that will add approximately 49.5 megawatts (MW) of peak-power generation capability to the state of California. Construction of the power plant will occur within an approximately 3-acre parcel (see Figure 2).

Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue. Electric transmission will be via overhead line that will extend from the project site to an existing SDG&E line approximately 1,000 feet to the north, at the corner of Harvest Road and Otay Mesa Road. An access road will extend from Sanyo Avenue to the site. (These roadways are shown on Figure 3.)

The CalPeak Plant site is located in Section 36, Township 18 South, Range 1 West, San Bernardino Base and Meridian.

The power plant is being pursued in accordance with Executive Order D-26-01, issued by Governor Gray Davis on February 8, 2001, which states in part that, "...local, regional and state agencies...shall undertake the tasks described herein as expeditiously as possible for the purpose of accelerating the availability of new generation sources to the State." Based on the expedited schedule, it would be helpful if you could provide the list of Native American contacts as soon as possible, in advance of the results of the record search of Sacred Lands.

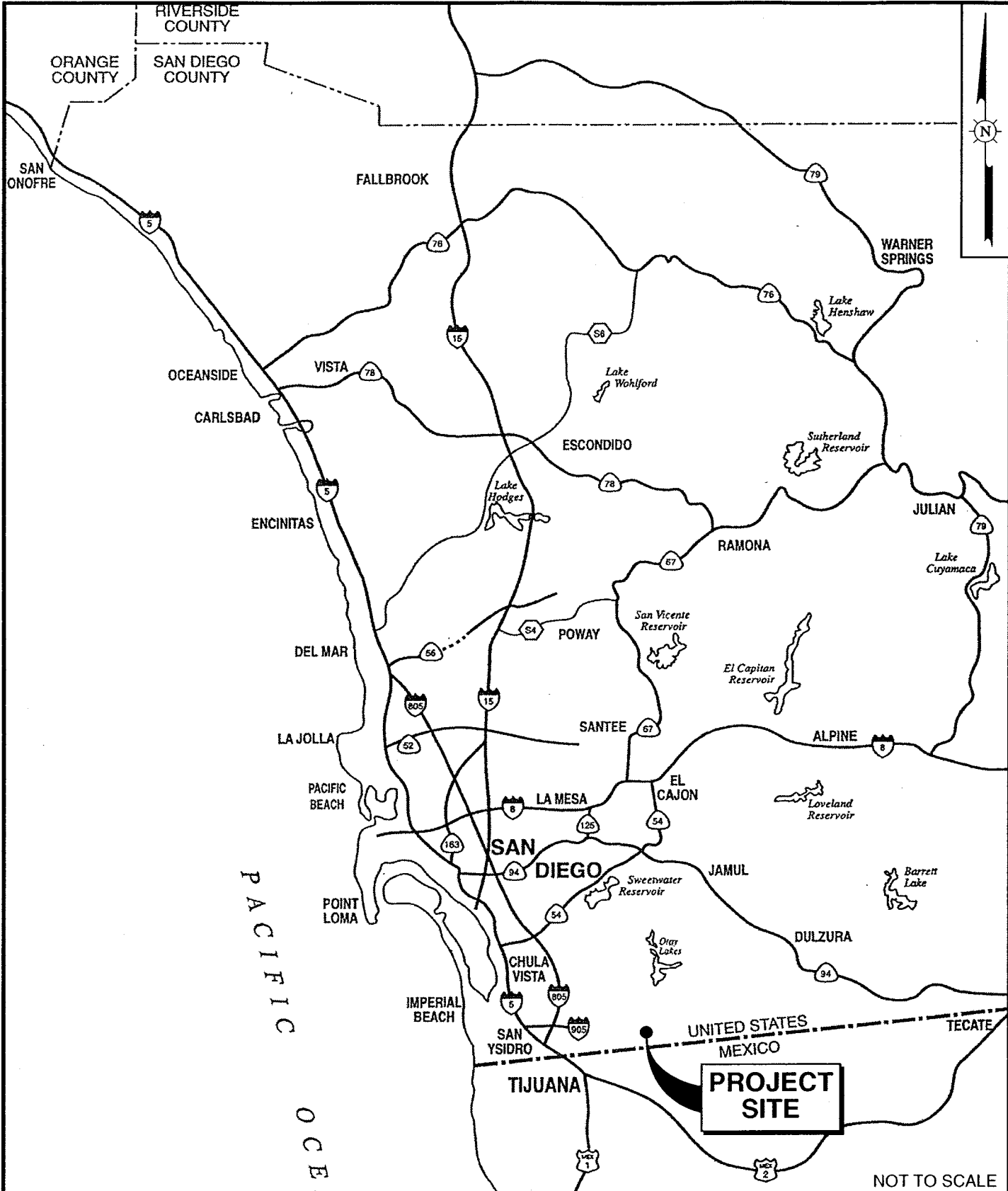
If you have any questions, please call me or Bob Mason, the project manager.

Again, thank you for your assistance.

Sincerely,

Carolyn E. Trindle

CET/KM:jb
Attachments



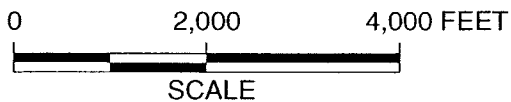
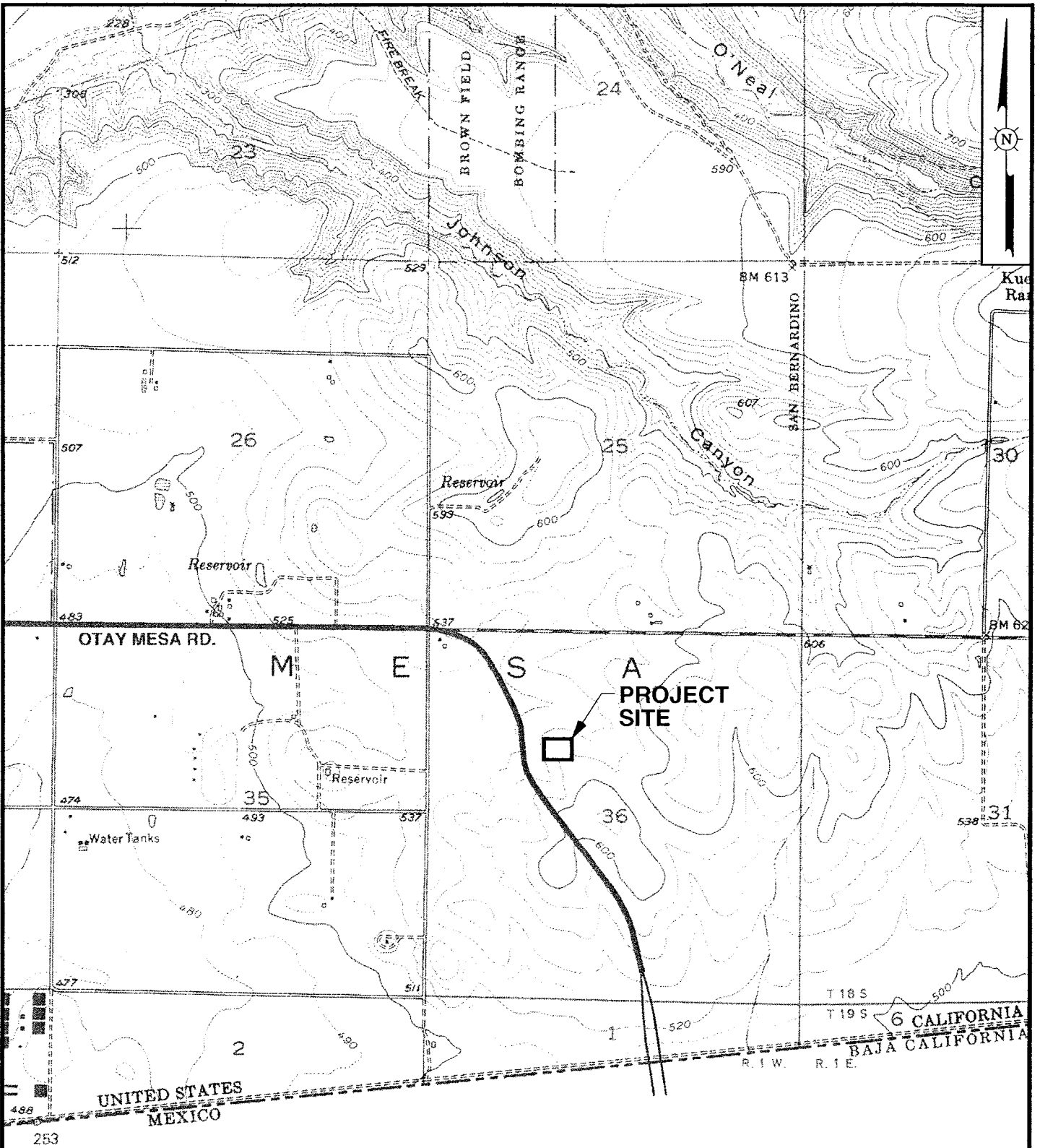
SOURCE: HELIX, 2001.

REGIONAL LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

TRC

FIGURE 1



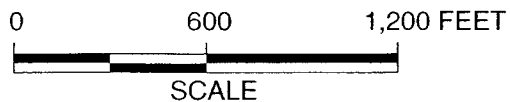
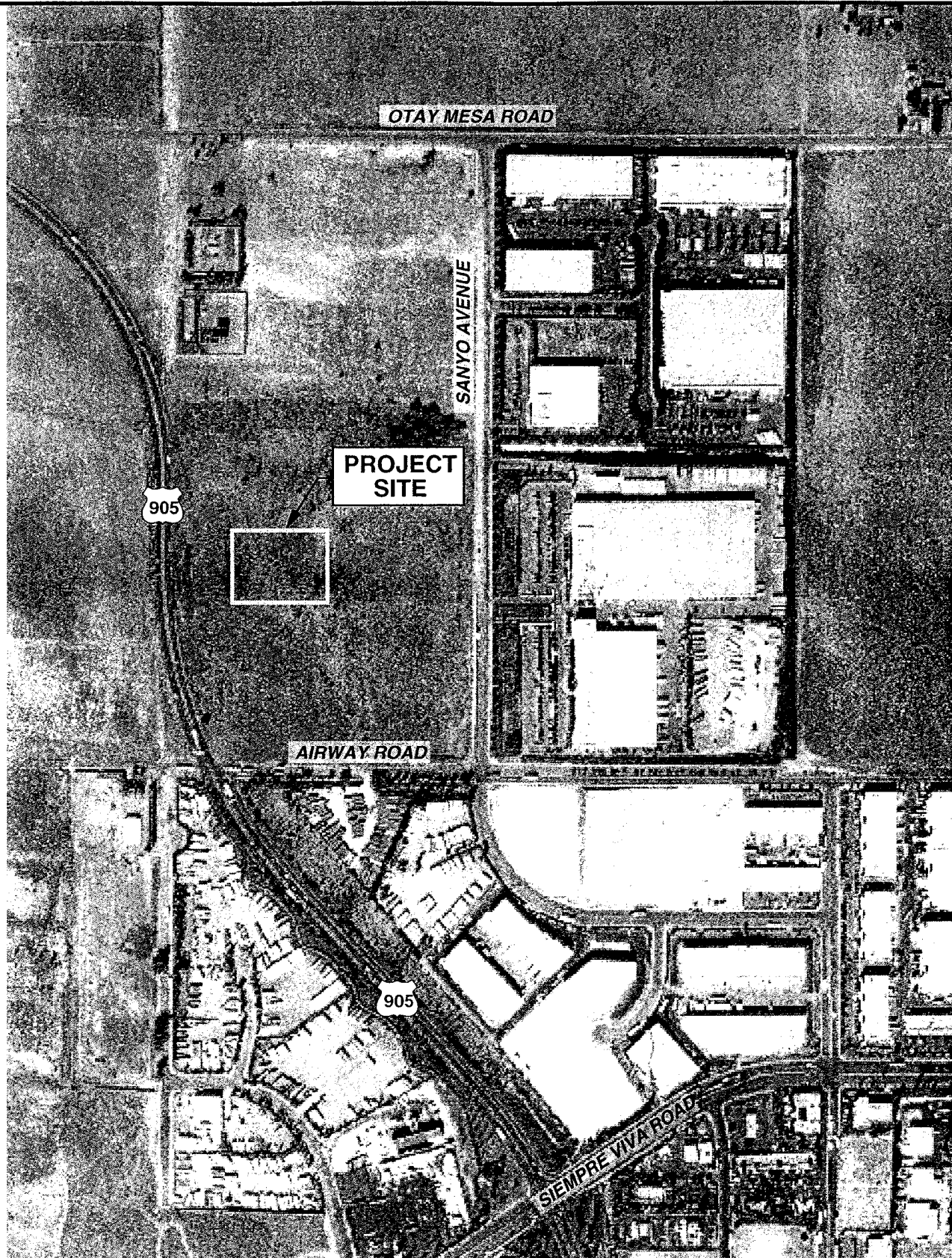
REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP OF OTAY MESA, CALIFORNIA, DATED 1975.

SITE LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

TRC

FIGURE 2



REFERENCE: AERIAL PHOTOGRAPH BY LANDISCOR,
DATED JANUARY 4, 2000.

SITE LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

TRC

FIGURE 3

APPENDIX M.2

LETTER FROM NAHC

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390



June 4, 2001

Carolyn E. Trindle
TRC
21 Technology Drive
Irvine, CA 92618

RE: CalPeak Power - Border, LLC (CalPeak) Energy Project, San Diego County

Sent By Fax: (949) 727-7399
Pages Sent: 3

Dear Ms. Trindle:

A record search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. A minimum of two weeks must be allowed for responses after notification.

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

A handwritten signature in black ink, appearing to read "Rob Wood", is located above the typed name.

Rob Wood
Associate Governmental Program Analyst

NATIVE AMERICAN CONTACTS
San Diego County
June 4, 2001

Barona Group of the Capitan Grande
Clifford LaChappa, Spokesman
1095 Barona Road Diegueno
Lakeside, CA 92040
(619) 443-6612/13

Sycuan Band of Mission Indians
Georgia Tucker, Chairperson
5459 Dehesa Road Diegueno
El Cajon, CA 92021
619 445-2613
619 445-1927 Fax

Ewiiapaayp Tribal Office
Harlan Pinto, Chairperson
PO Box 2250 Diegueno
Alpine, CA 91903-2
(619) 445-6315

Viejas Band of Mission Indians
Steven TeSam, Chairperson
PO Box 908 Diegueno
Alpine, CA 91903
(619) 445-3810
(619) 445-5337 Fax

Manzanita Band of Mission Indians
Leroy J. Elliott, Chairperson
PO Box 1302 Diegueno
Boulevard, CA 91905
(619) 766-4930
(619) 766-4930 Fax

Kumeyaay Cultural Historic Committee
Ron Christman
56 Viejas Grade Road Diegueno/Kumeyaay
Alpine, CA 92001
(619) 445-0385

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
PO Box 365 Diegueno
Valley Center, CA 92082
(760) 749-3200
(760) 749-3876

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 Diegueno
Campo, CA 91906
(619) 478-9046
(619) 478-5818 Fax

Santa Ysabel Band of Mission Indians
Ben Scerato, Chairperson
PO Box 130 Diegueno
Santa Ysabel, CA 92070
(760) 765-0846
(760) 765-0320 Fax

Jamul Indian Village
Kenneth Meza, Chairperson
P.O. Box 612 Diegueno
Jamul, CA 91935
(619) 669-4785
Fax: (619) 669-4817

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 0097.96 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed CalPeak Power - Border, LLC (CalPeak), San Diego County.

**NATIVE AMERICAN CONTACTS
San Diego County
June 4, 2001**

Mesa Grande Band of Mission Indians
Howard Maxcy, Chairperson
P.O Box 270 Diegueno
Santa Ysabel, CA 92070
(960) 782-3818
(960) 782-3570 Fax

La Posta Band of Mission Indians
James Hill, Tribal Administrator
PO Box 1048 Diegueno
Boulevard, CA 91905
(619) 478-2113

Kumeyaay Cultural Heritage Preservation
Paul Cuero
36190 Church Road, Suite 5 Diegueno/ Kumeyaay
Campo, CA 91906
(619) 478-9046
(619) 478-5818 Fax

Carmen Lucas
PO Box 44 Diegueno - Kwaaymil
Julian, CA 92036
(619) 709-4207

Inaja Band of Mission Indians
Rebecca Maxcy
PO Box 186 Diegueno
Santa Ysabel, CA 92070

Kumeyaay Cultural Repatriation Committee
Steve Banegas, Spokesperson
1095 Barona Road Diegueno/Kumeyaay
Lakeside, CA
(619) 443-6612
(619) 443-0681 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.96 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed CalPeak Power - Border, LLC (CalPeak), San Diego County.

APPENDIX M.3

LETTER TO NATIVE AMERICAN CONTACTS



June 4, 2001

Project No. 31765

Mr. Clifford LaChappa, Spokesman
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, California 92040

Dear Mr. LaChappa:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

The peak generating capacity will be provided by one natural gas-fired turbine generator. It is expected that construction will take about 12 weeks, beginning in July 2001.

Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue.

Electric transmission will be via overhead line that will extend from the Project site to an existing SDG&E line approximately 1,000 feet to the north, at the corner of Harvest Road and Otay Mesa Road. An access road will extend from Sanyo Avenue to the site. (These roadways are shown on Figure 3).

This letter is to solicit concerns you may have regarding the Project, as well as input you may have regarding cultural resources in the Project area.

If you would like to respond to this letter, please submit your reply to:

Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,

A handwritten signature in cursive script that reads "Robert C. Mason".

Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Howard Maxcy, Chairperson
Mesa Grande Band of Mission Indians
Post Office Box 270
Santa Ysabel, California 92070

Dear Mr. Maxcy:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue.

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Harlan Pinto, Chairperson
Ewiiapaayp Tribal Office
Post Office Box 2250
Alpine, California 91903-2

Dear Mr. Pinto:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue.

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Leroy J. Elliott, Chairperson
Manzanita Band of Mission Indians
Post Office Box 1302
Boulevard, California 91905

Dear Mr. Elliott:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

The peak generating capacity will be provided by one natural gas-fired turbine generator. It is expected that construction will take about 12 weeks, beginning in July 2001.

Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue.

Electric transmission will be via overhead line that will extend from the Project site to an existing SDG&E line approximately 1,000 feet to the north, at the corner of Harvest Road and Otay Mesa Road. An access road will extend from Sanyo Avenue to the site. (These roadways are shown on Figure 3).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

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Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Allen E. Lawson, Chairperson
San Pasqual Bank of Mission Indians
Post Office Box 365
Valley Center, California 92082

Dear Mr. Lawson:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

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TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Ben Scerato, Chairperson
Santa Ysabel Band of Mission Indians
Post Office Box 130
Santa Ysabel, California 92070

Dear Mr. Scerato:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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If you would like to respond to this letter, please submit your reply to:

Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Ms. Georgia Tucker, Chairperson
Sycuan Band of Mission Indians
5459 Dehesa Road
El Cajon, California 92021

Dear Ms. Tucker:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

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Attachments

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Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Steven TeSam, Chairperson
Viejas Band of Mission Indians
Post Office Box 908
Alpine, California 91903

Dear Mr. TeSam:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Ron Christman
Kumeyaay Cultural Historic Committee
56 Viejas Grade Road
Alpine, California 92001

Dear Mr. Christman:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Ralph Goff, Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, California 91906

Dear Mr. Goff:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Kenneth Meza, Chairperson
Jamul Indian Village
Post Office Box 612
Jamul, California 91935

Dear Mr. Meza:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Paul Cuero
Kumeyaay Cultural Heritage Preservation
36190 Church Road, Suite 5
Campo, California 91906

Dear Mr. Cuero:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Ms. Carmen Lucas
Post Office Box 44
Julian, California 92036

Dear Ms. Lucas:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Ms. Rebecca Maxcy
Inaja Band of Mission Indians
Post Office Box 186
Santa Ysabel, California 92070

Dear Ms. Maxcy:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

The peak generating capacity will be provided by one natural gas-fired turbine generator. It is expected that construction will take about 12 weeks, beginning in July 2001.

Water will be supplied via an interconnection from the City of San Diego water system from piping located along Sanyo Avenue, about 400 feet east of the site. Natural gas will be provided via the San Diego Gas and Electric (SDG&E) transmission line, also located along Sanyo Avenue.

Electric transmission will be via overhead line that will extend from the Project site to an existing SDG&E line approximately 1,000 feet to the north, at the corner of Harvest Road and Otay Mesa Road. An access road will extend from Sanyo Avenue to the site. (These roadways are shown on Figure 3).

This letter is to solicit concerns you may have regarding the Project, as well as input you may have regarding cultural resources in the Project area.

If you would like to respond to this letter, please submit your reply to:

Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

RCM/KM:ks
Attachments

TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. Steve Banegas, Spokesperson
Kumeyaay Cultural Repatriation Committee
1095 Barona Road
Lakeside, California 92040

Dear Mr. Banegas:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

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TRC

Customer-Focused Solutions

June 4, 2001

Project No. 31765

Mr. James Hill, Tribal Administrator
La Posta Band of Mission Indians
Post Office Box 1048
Boulevard, California 91905

Dear Mr. Hill:

On behalf of CalPeak Power-Border, LLC (CalPeak), this letter is to provide you with information, and to solicit your response, about the CalPeak proposal to construct an electric power generating facility in the city of San Diego near the international border in San Diego County, California. This project would provide 49.5 megawatts (MW) of peak electrical generating capacity to improve electrical service reliability for the state of California. The facility will be built on an approximately 3-acre power plant site in south-central San Diego (see Figures 1 and 2).

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This letter is to solicit concerns you may have regarding the Project, as well as input you may have regarding cultural resources in the Project area.

If you would like to respond to this letter, please submit your reply to:

Robert C. Mason
TRC
21 Technology Drive
Irvine, California 92618

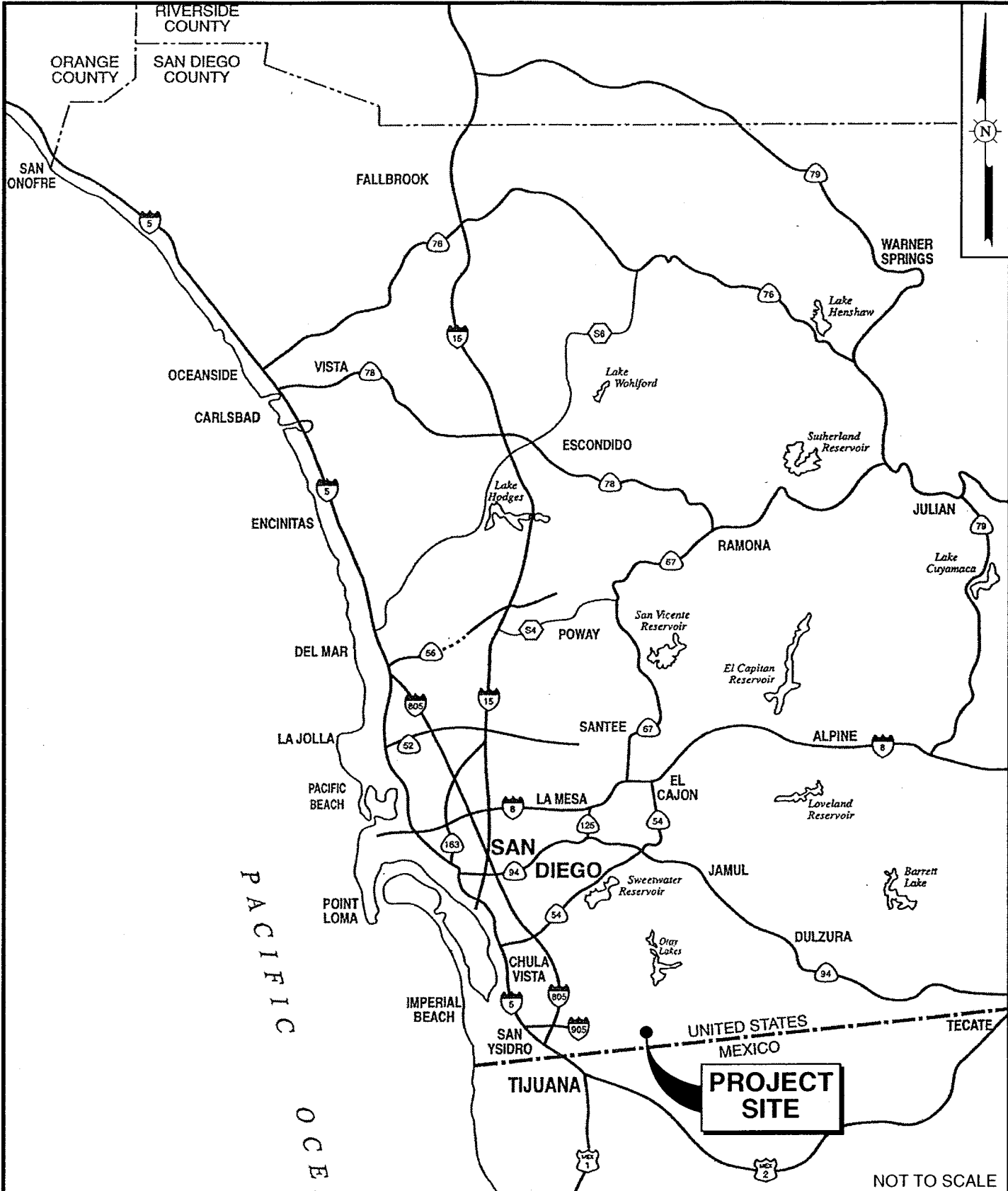
Thank you very much.

Sincerely,



Robert C. Mason
Vice President of Planning and Development

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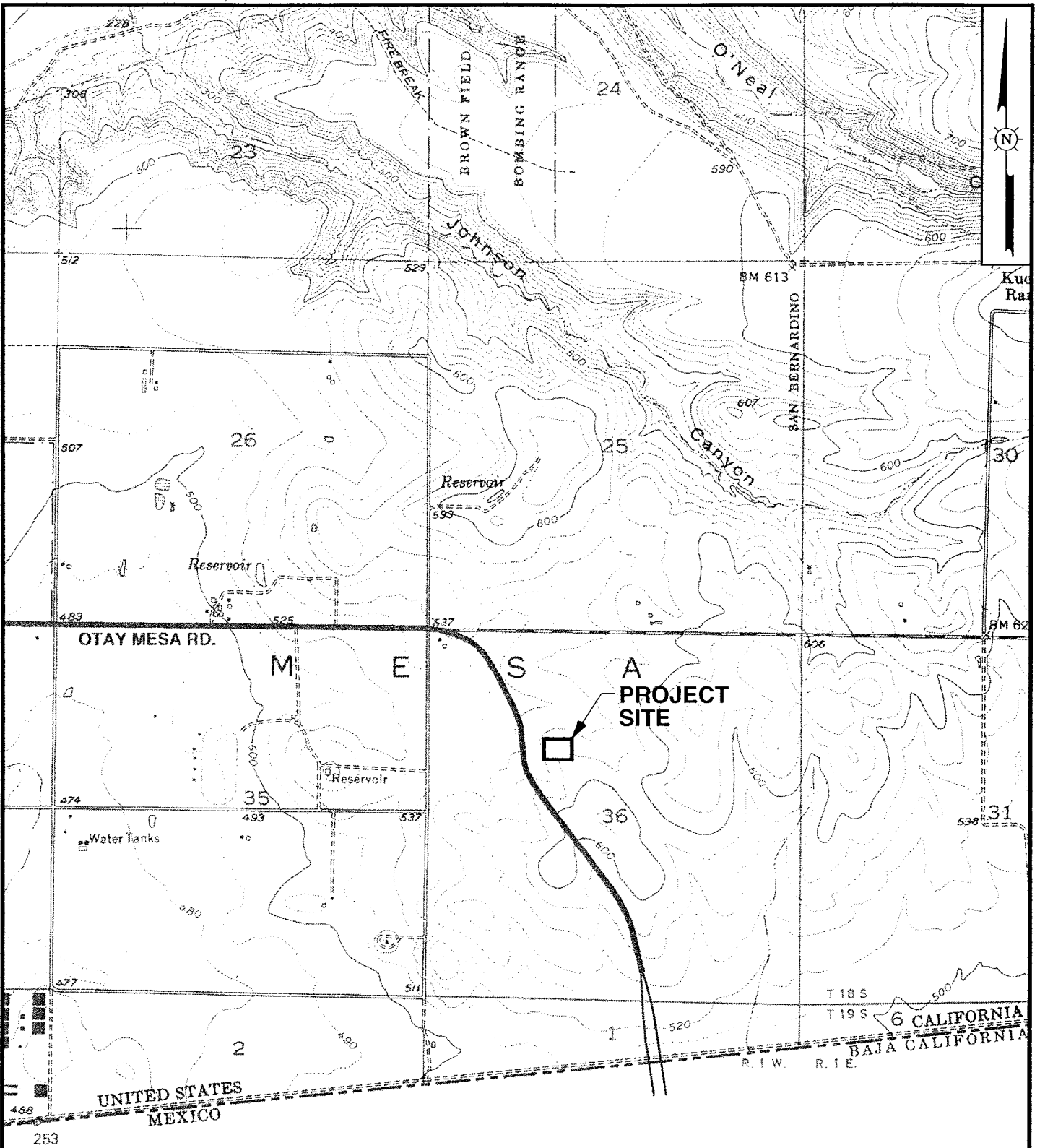


SOURCE: HELIX, 2001.

REGIONAL LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

TRC	FIGURE 1
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0 2,000 4,000 FEET
SCALE

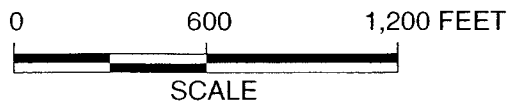
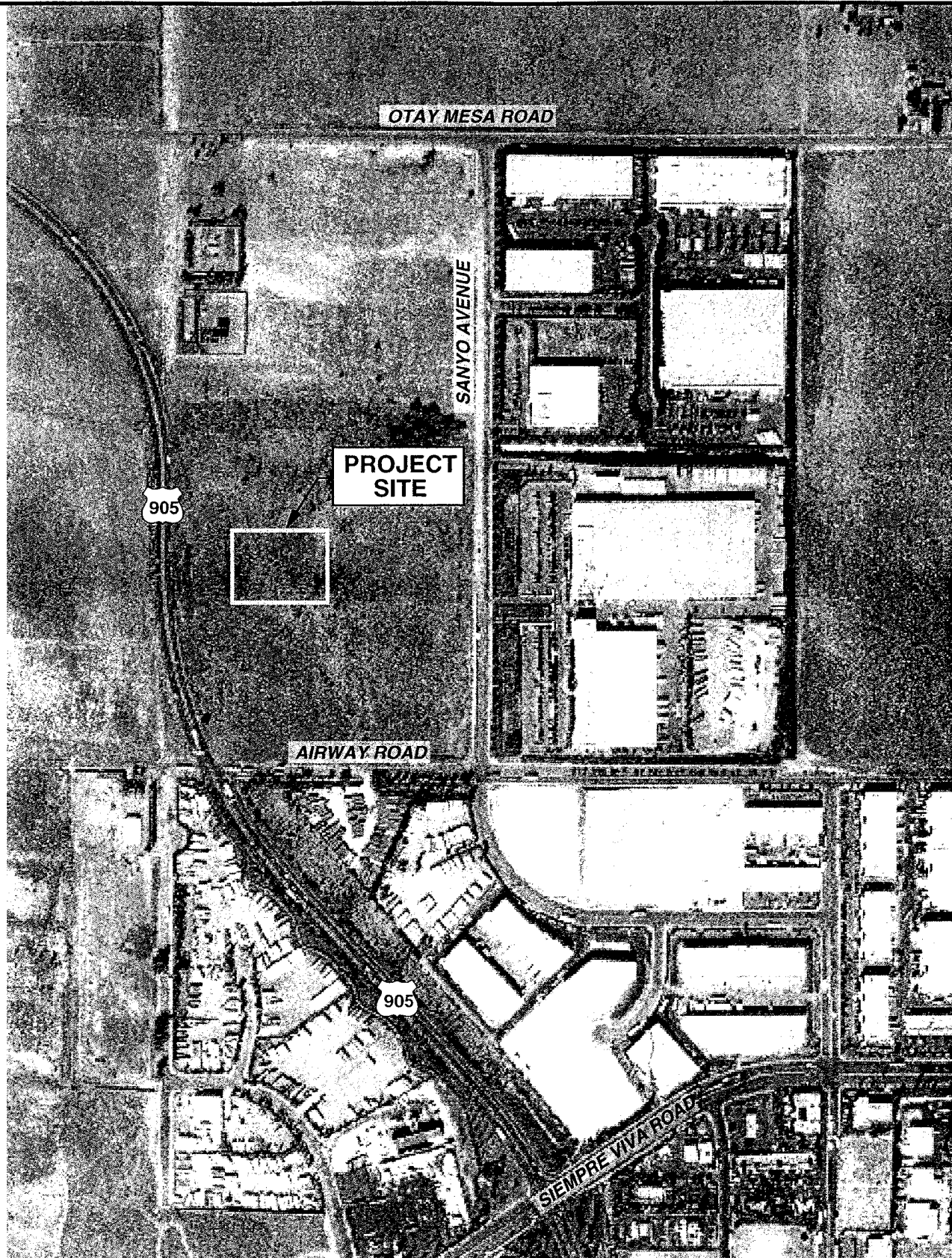
REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP OF
OTAY MESA, CALIFORNIA, DATED 1975.

SITE LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

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FIGURE 2



REFERENCE: AERIAL PHOTOGRAPH BY LANDISCOR,
DATED JANUARY 4, 2000.

SITE LOCATION MAP

CALPEAK BORDER
OTAY MESA POWER PLANT

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FIGURE 3